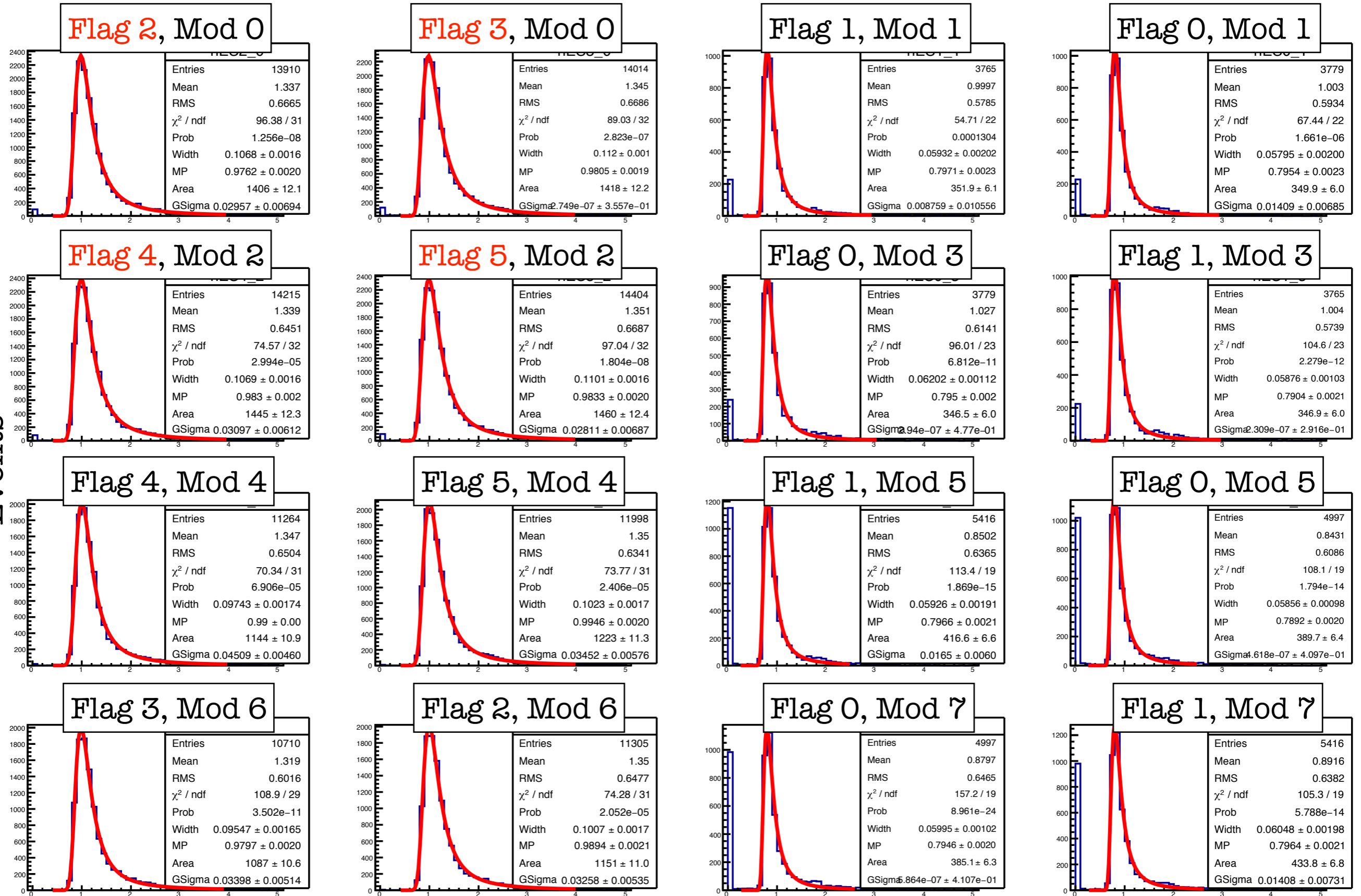


# Daily report

9 October, 2019  
HongMin KIM

- New Calibration Factor
- Pulse Shape

# Energy Distribution from the result of MC simulation

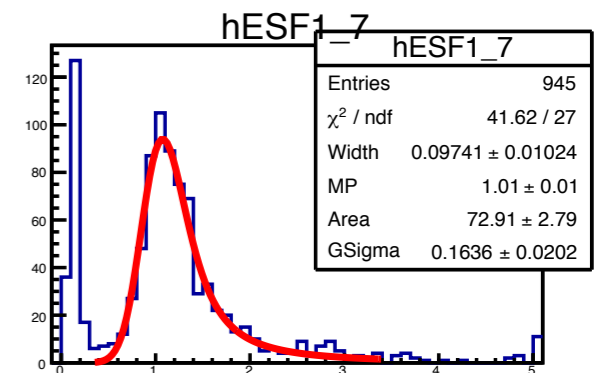
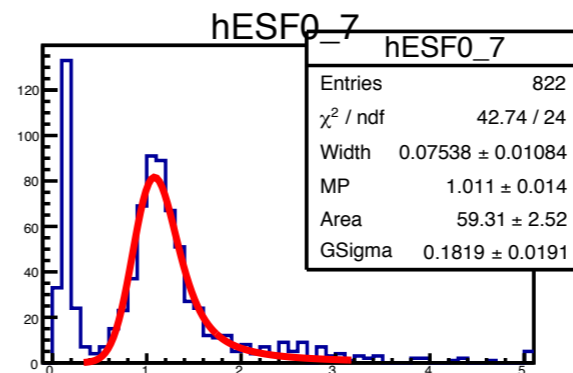
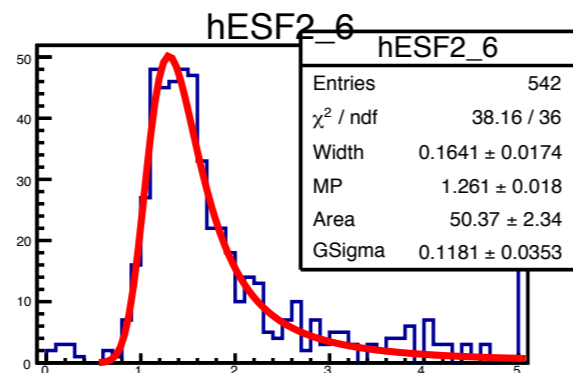
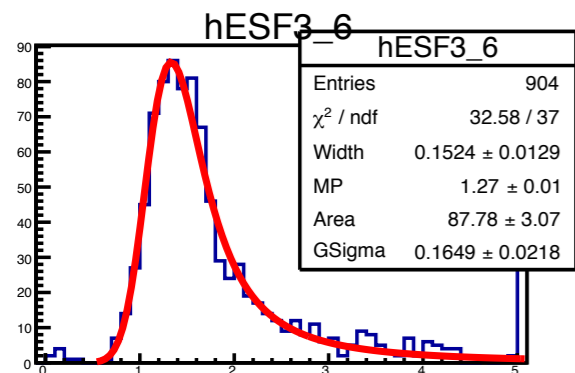
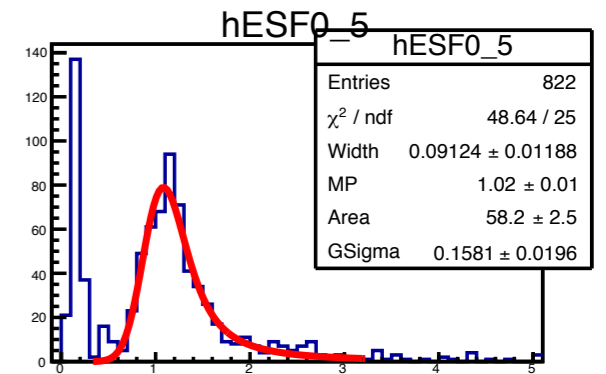
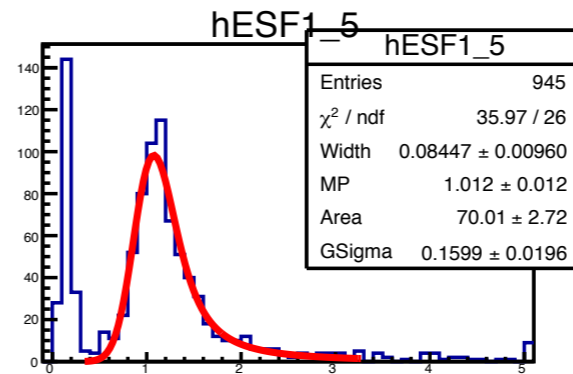
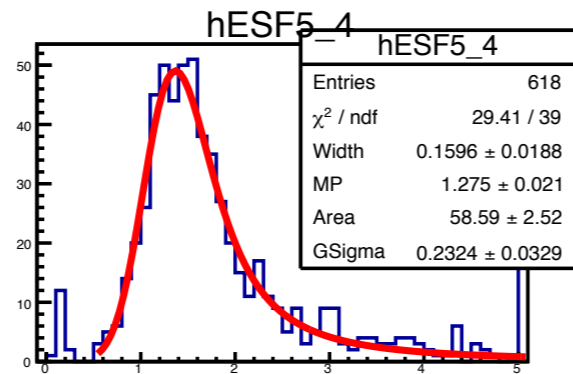
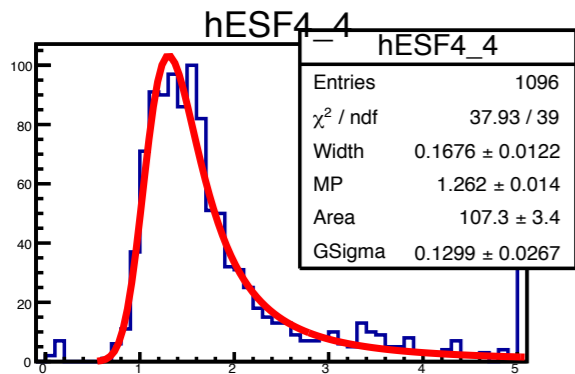
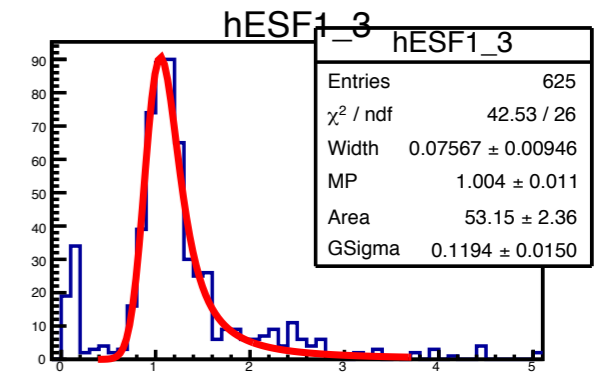
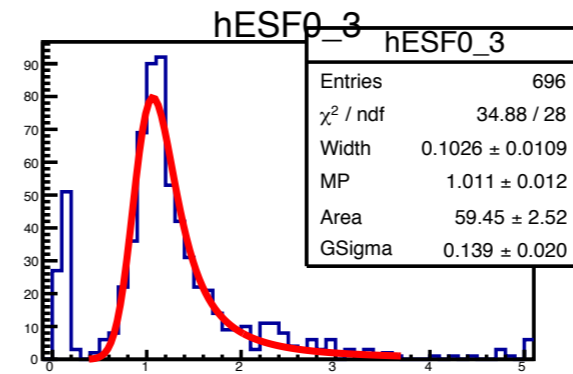
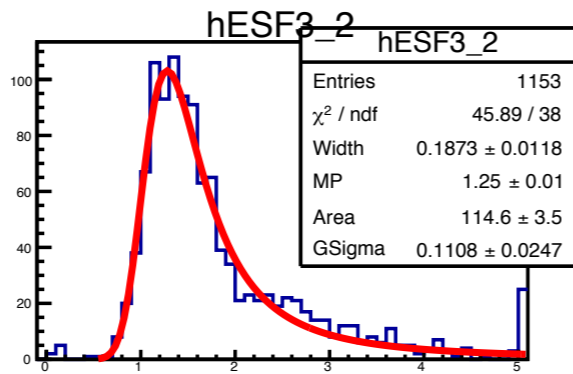
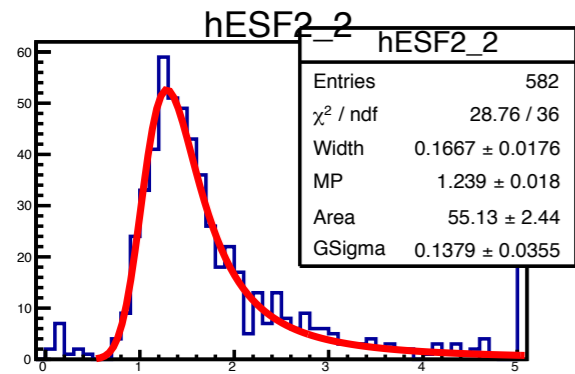
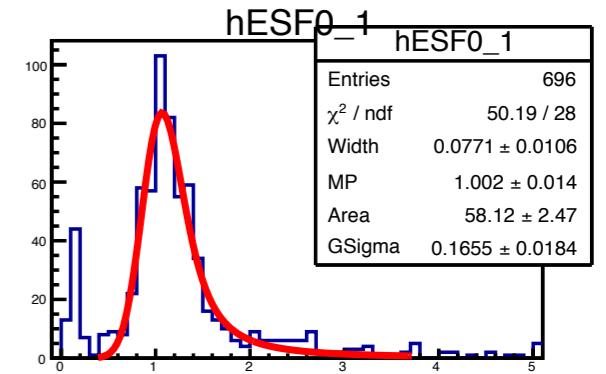
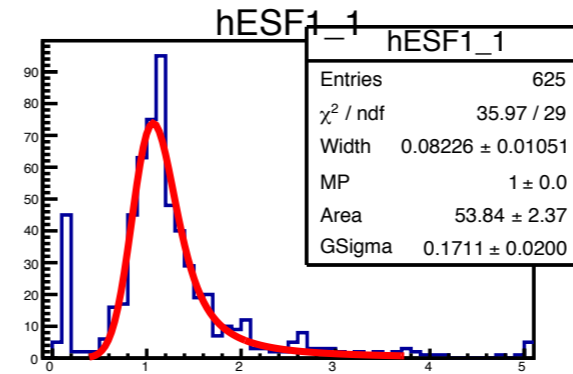
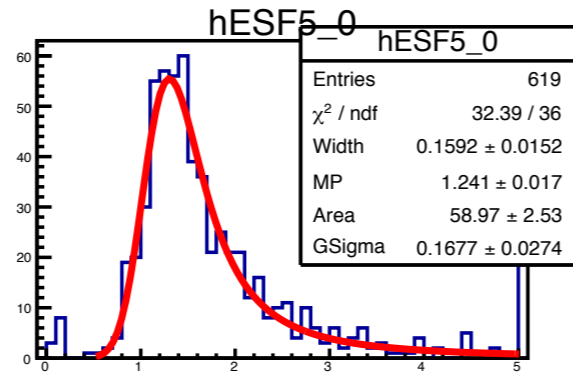
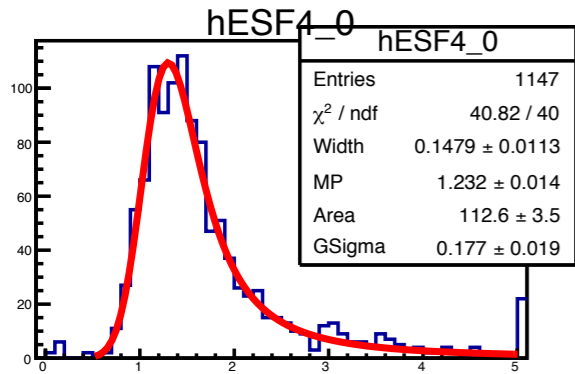


Fitting by Landau convoluted with Gaussian function

Energy [MeV]

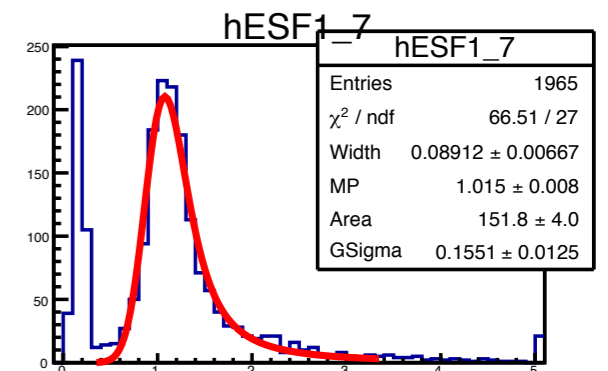
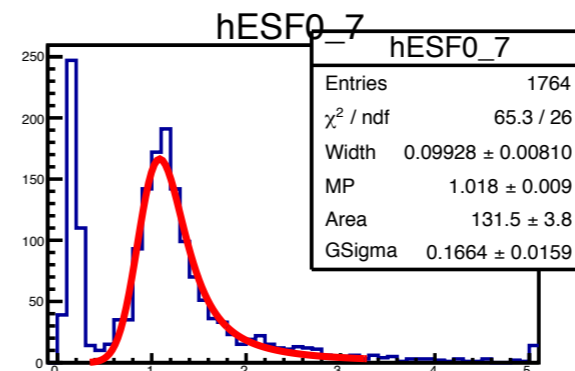
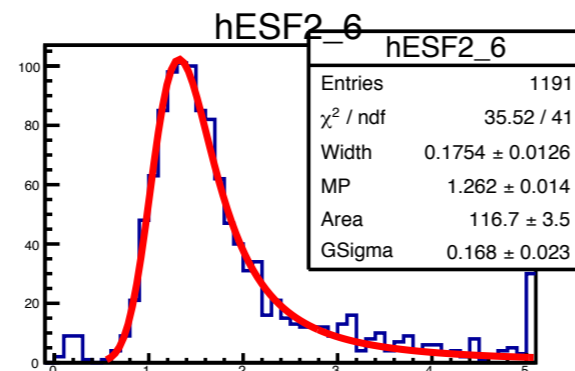
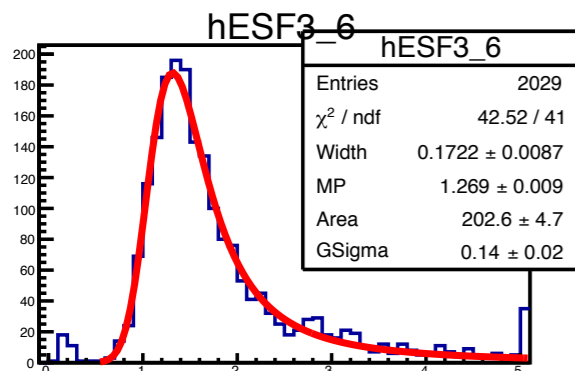
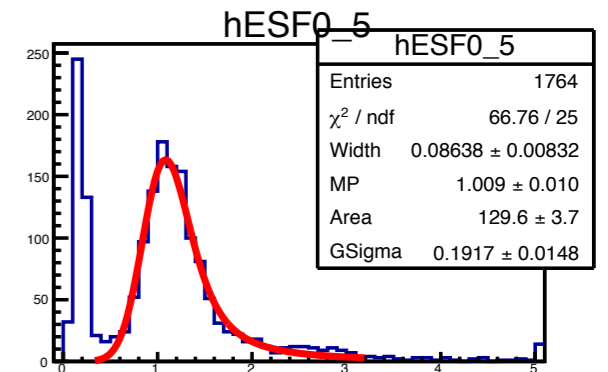
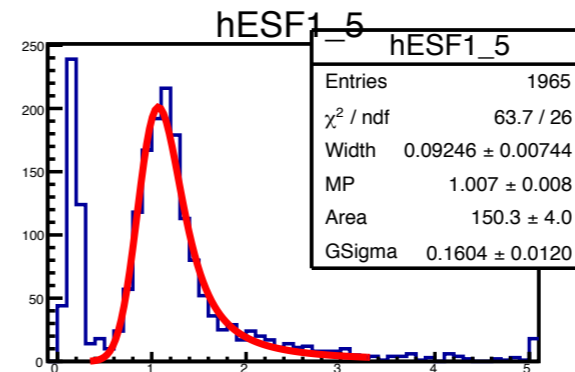
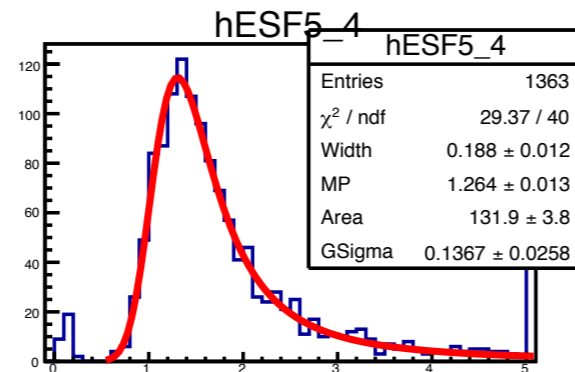
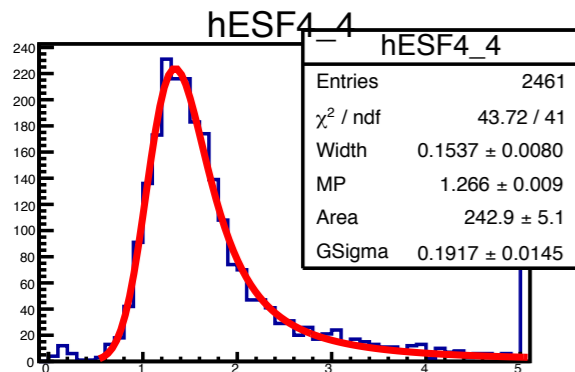
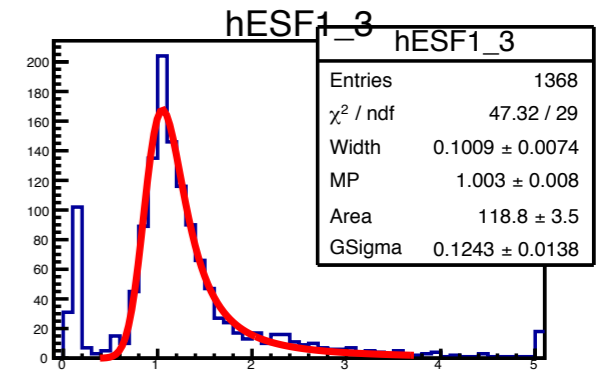
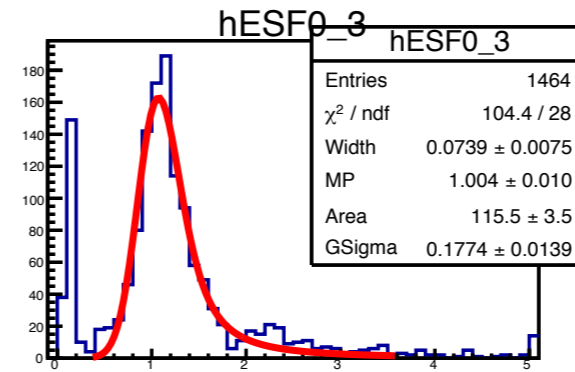
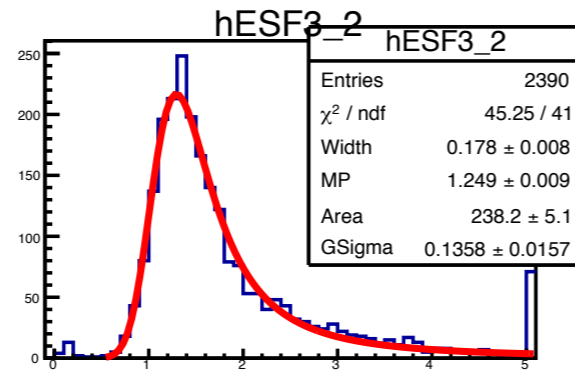
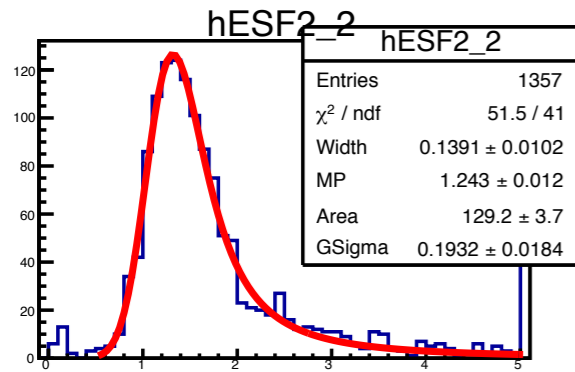
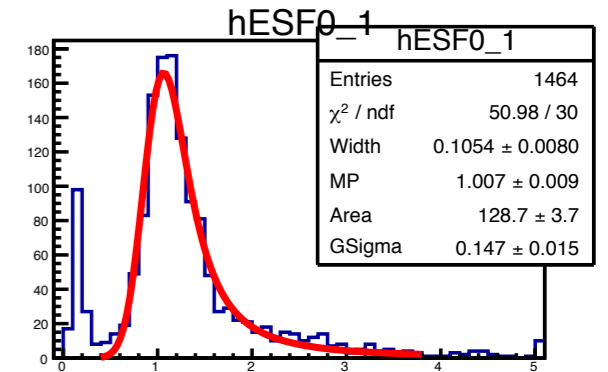
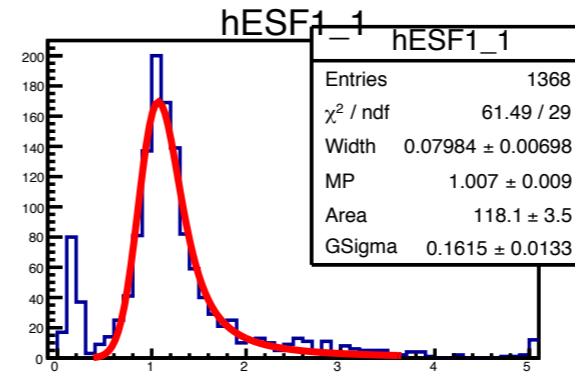
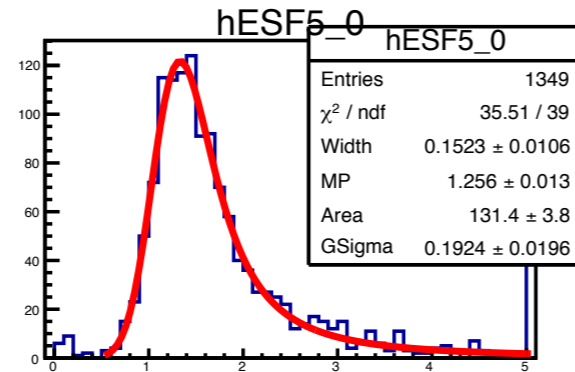
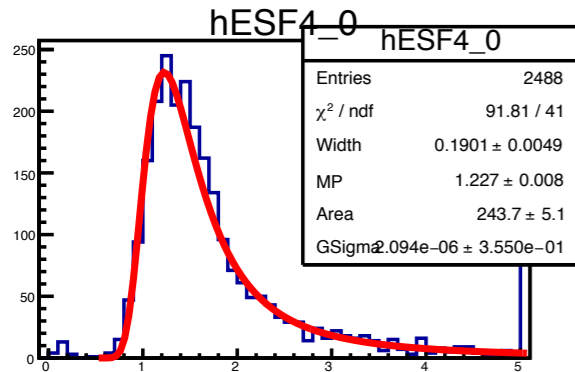
# Final Fitting after applying new calibration factor.

## Period 0



# Final Fitting after applying new calibration factor.

## Period 6

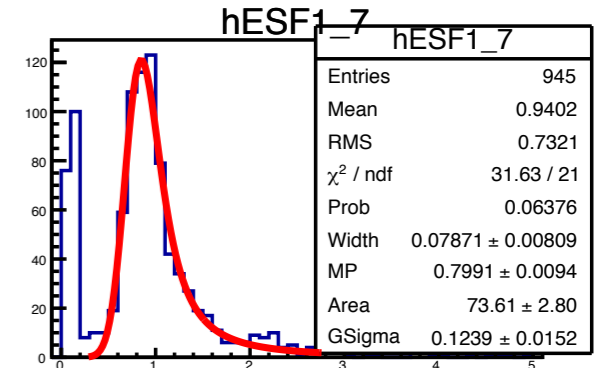
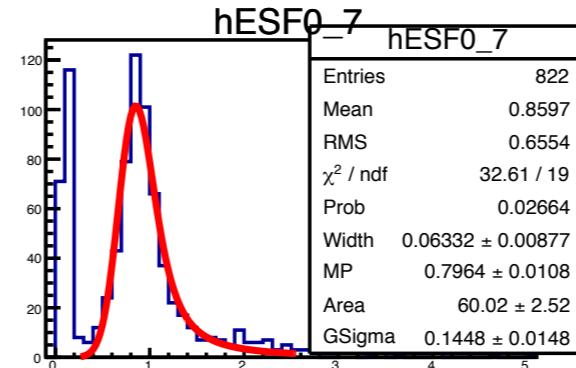
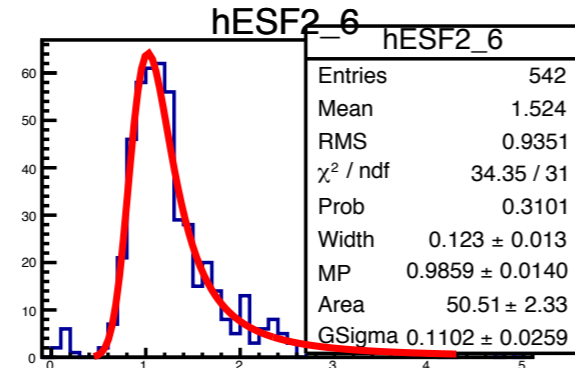
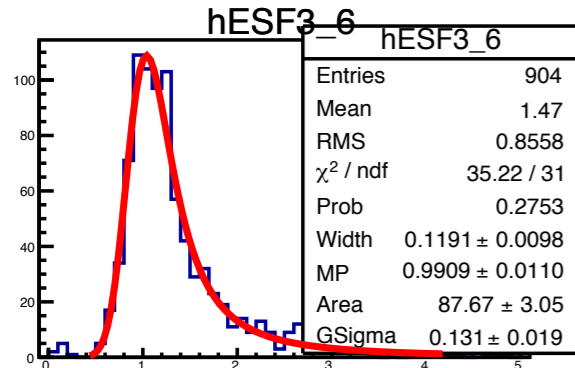
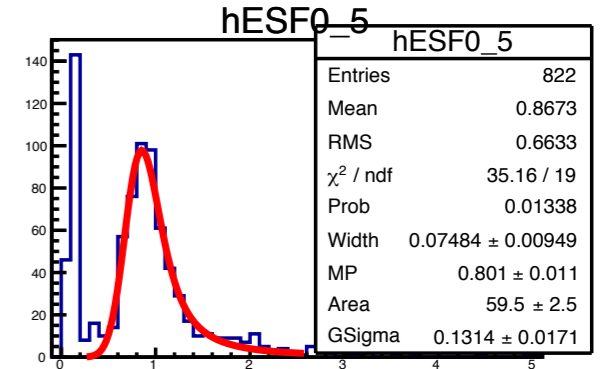
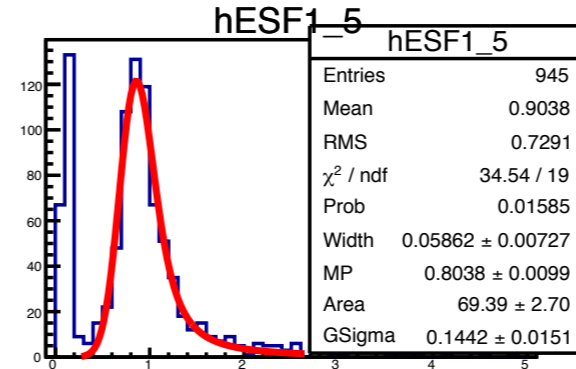
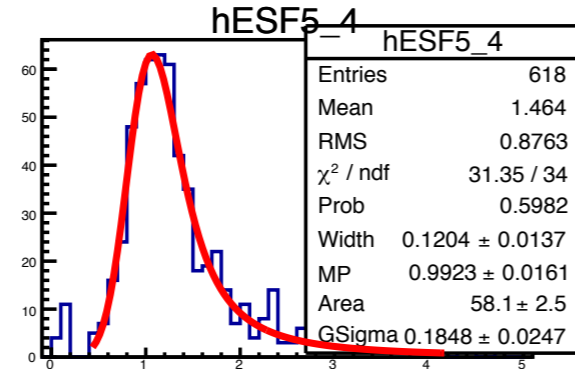
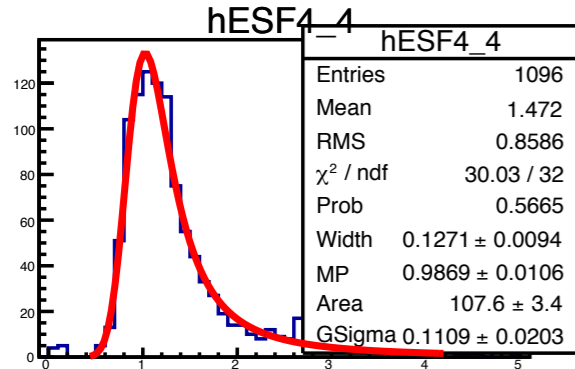
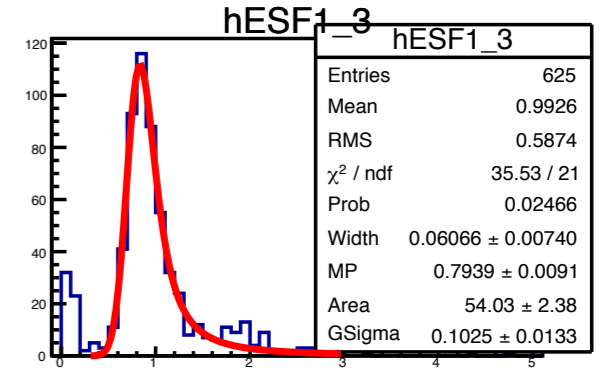
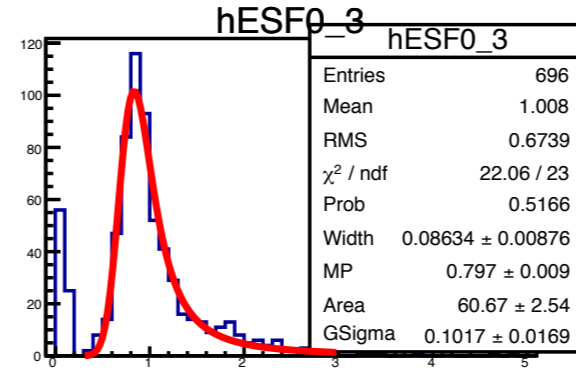
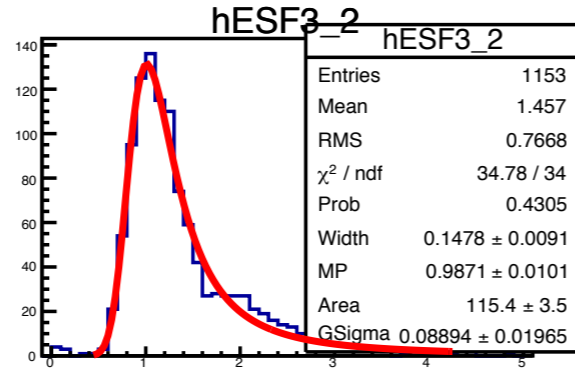
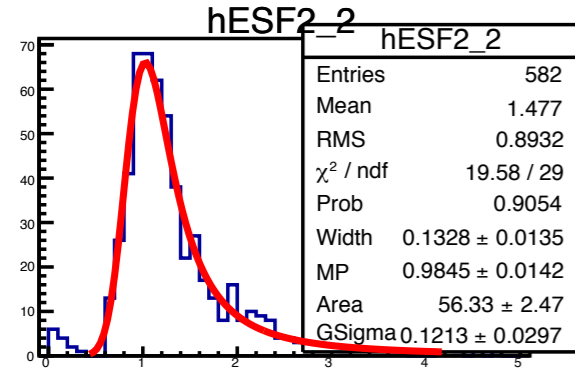
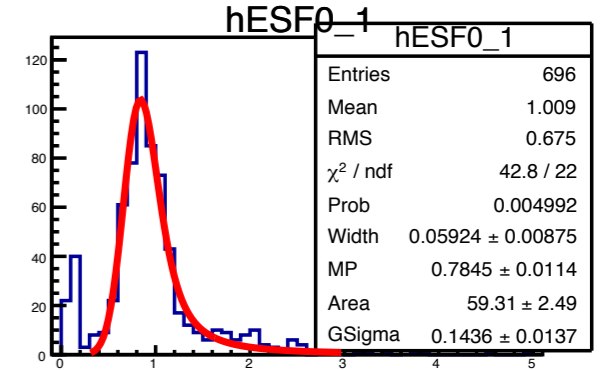
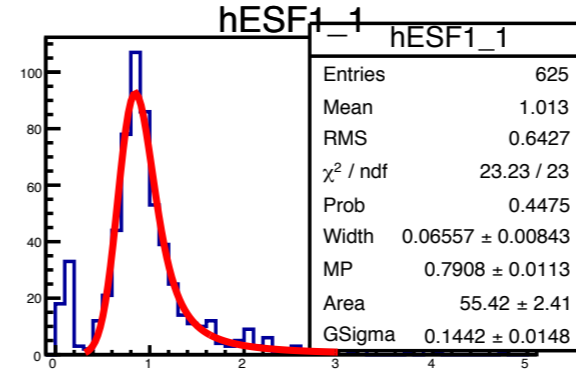
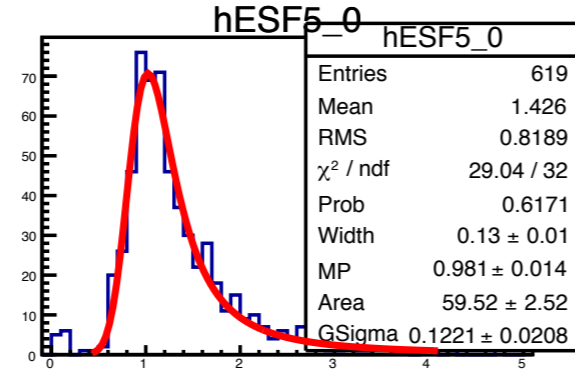
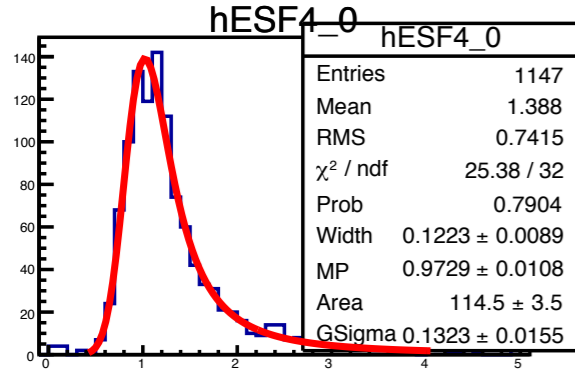


MP Value from the result of MC simulation.

```
float Norm_Factor[32] = { 0.79, 0.79, 0.79, 0.79,  
                          0.79, 0.79, 0.79, 0.79,  
                          0.79, 0.79, 0.79, 0.79,  
                          0.79, 0.79, 0.79, 0.79,  
                          0.78, 0.78, 0.78, 0.78,  
                          0.79, 0.79, 0.79, 0.79,  
                          0.78, 0.78, 0.78, 0.78,  
                          0.79, 0.79, 0.79, 0.79 };
```

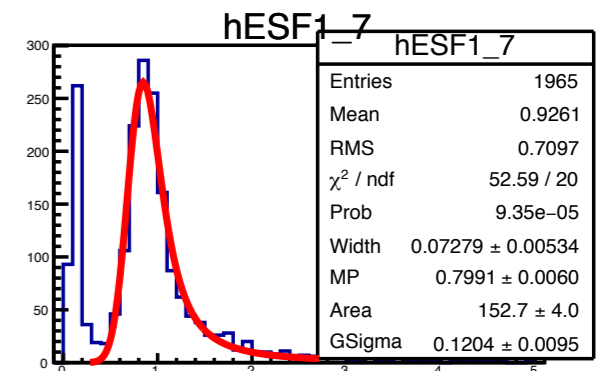
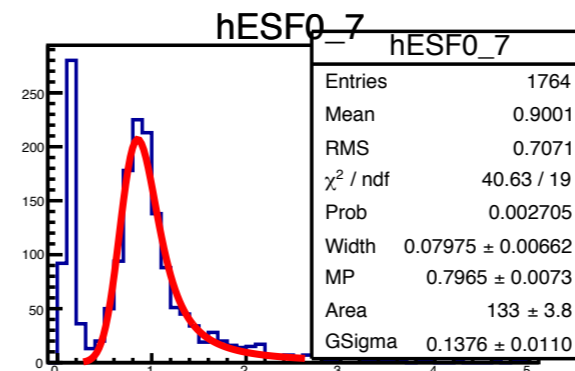
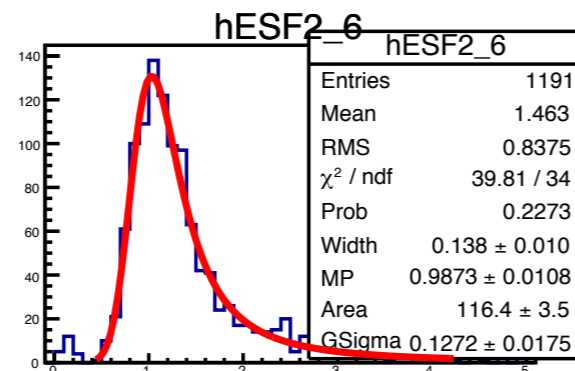
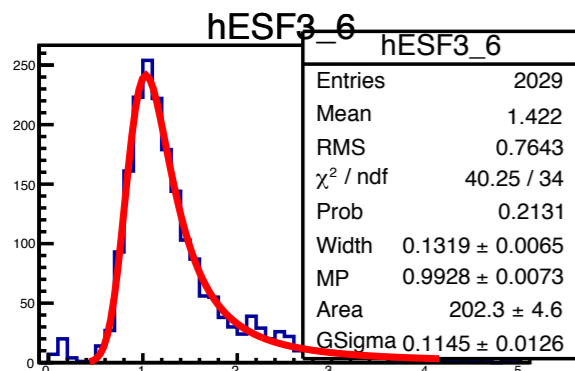
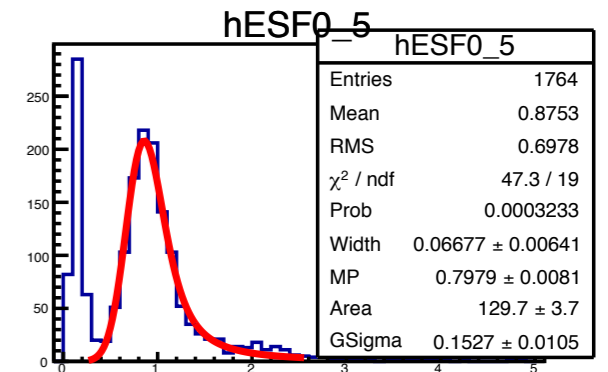
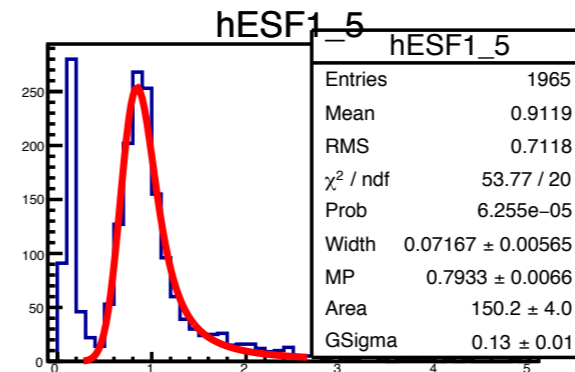
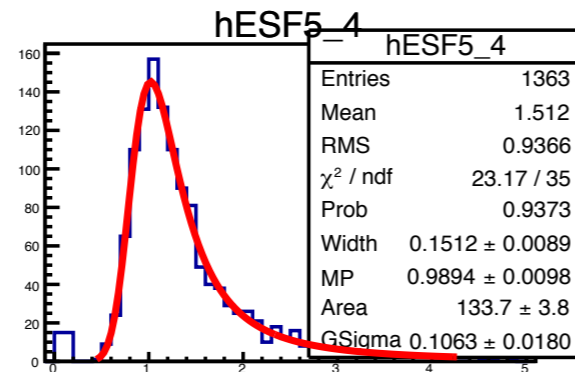
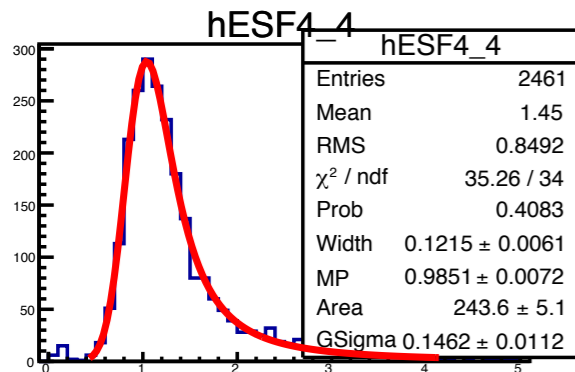
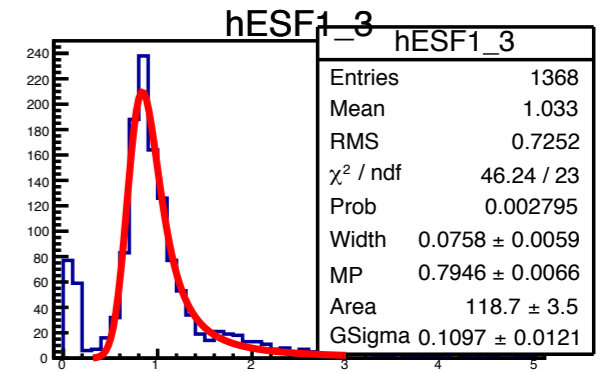
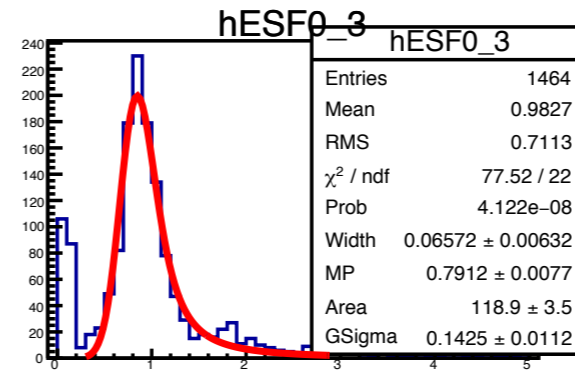
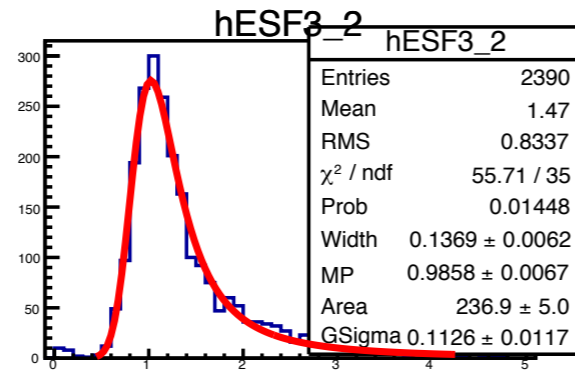
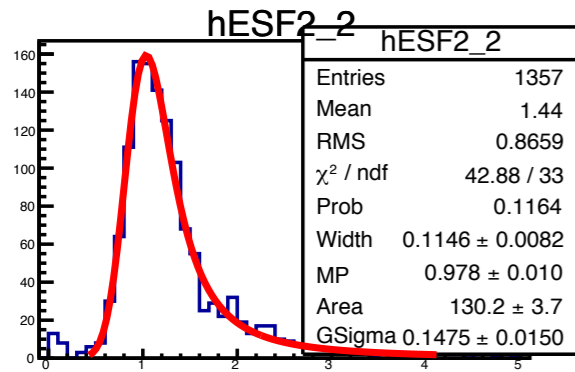
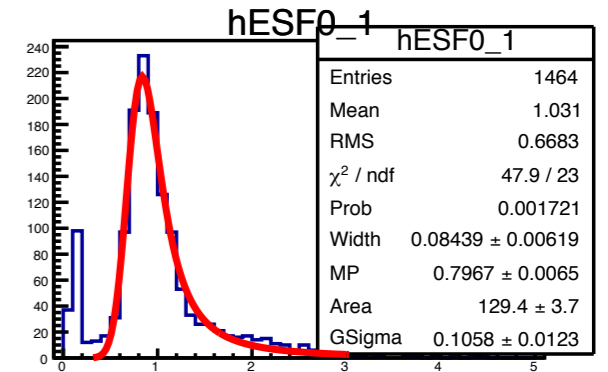
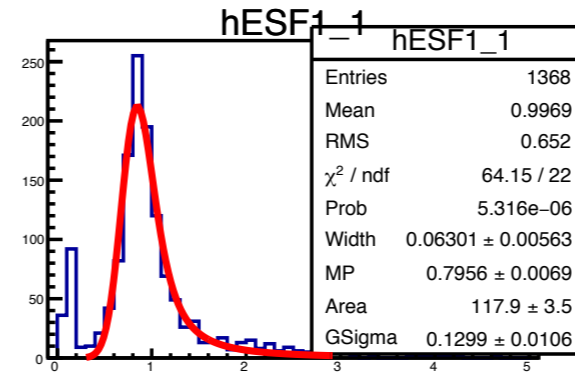
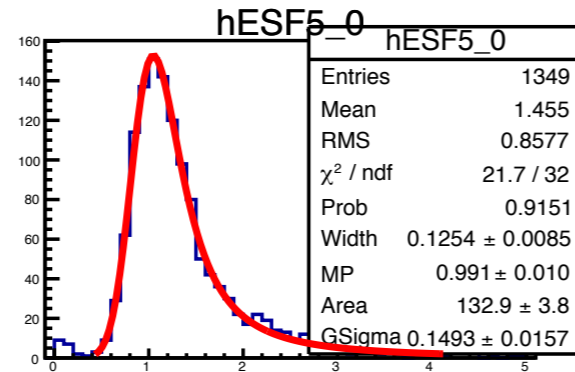
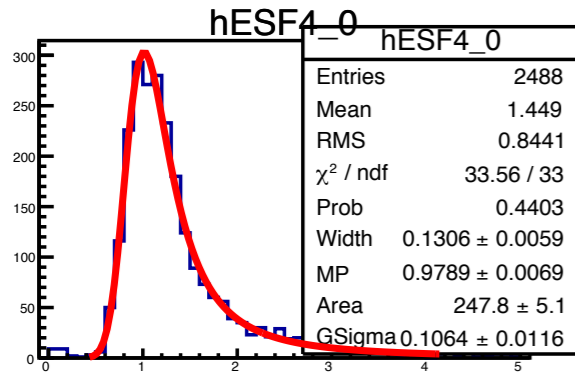
# Final Fitting after applying new calibration factor.

## Period 0



# Final Fitting after applying new calibration factor.

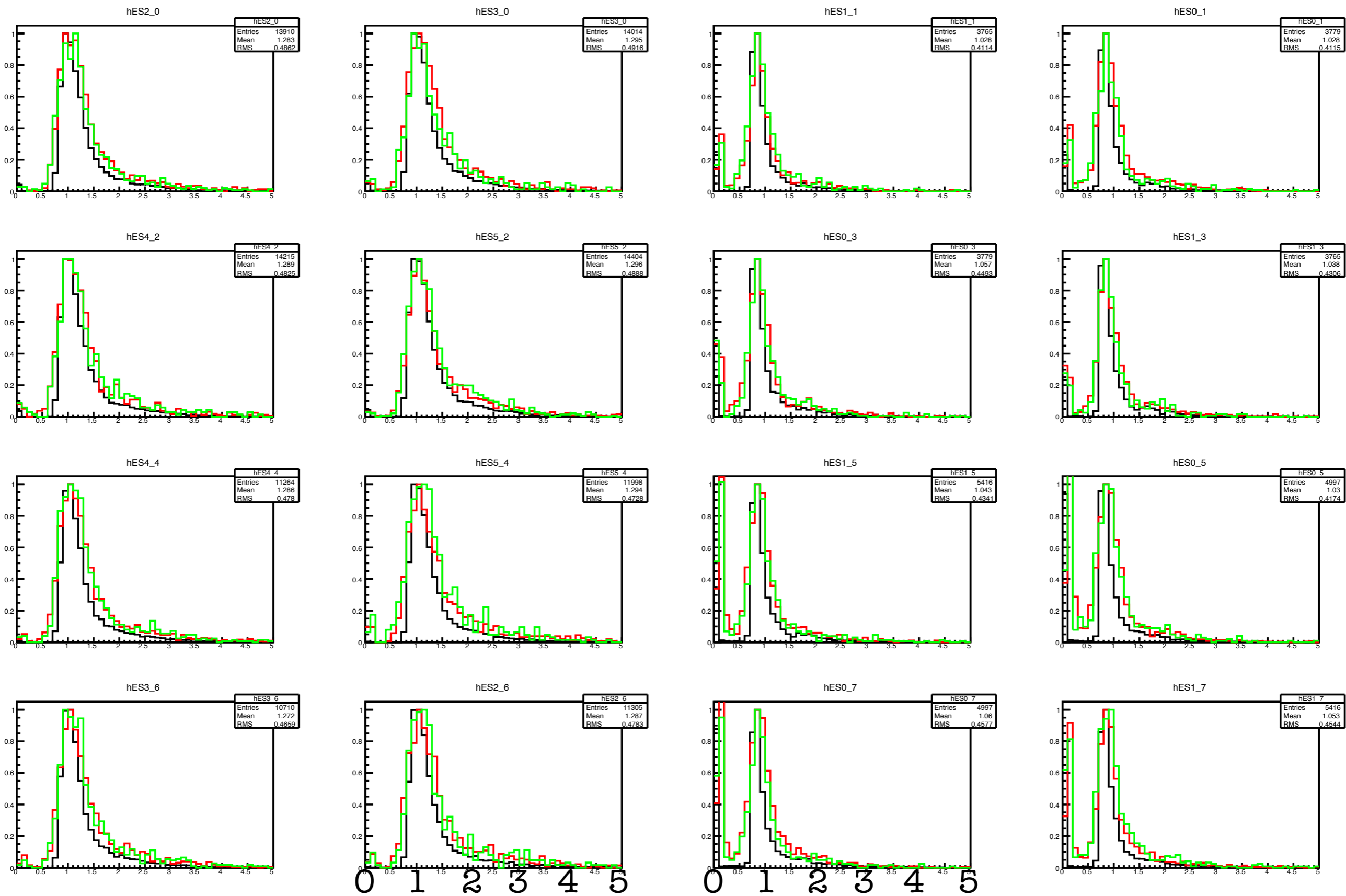
## Period 6



# Energy distribution

MC, **Period0**, **Period6**

Events



Energy [MeV]

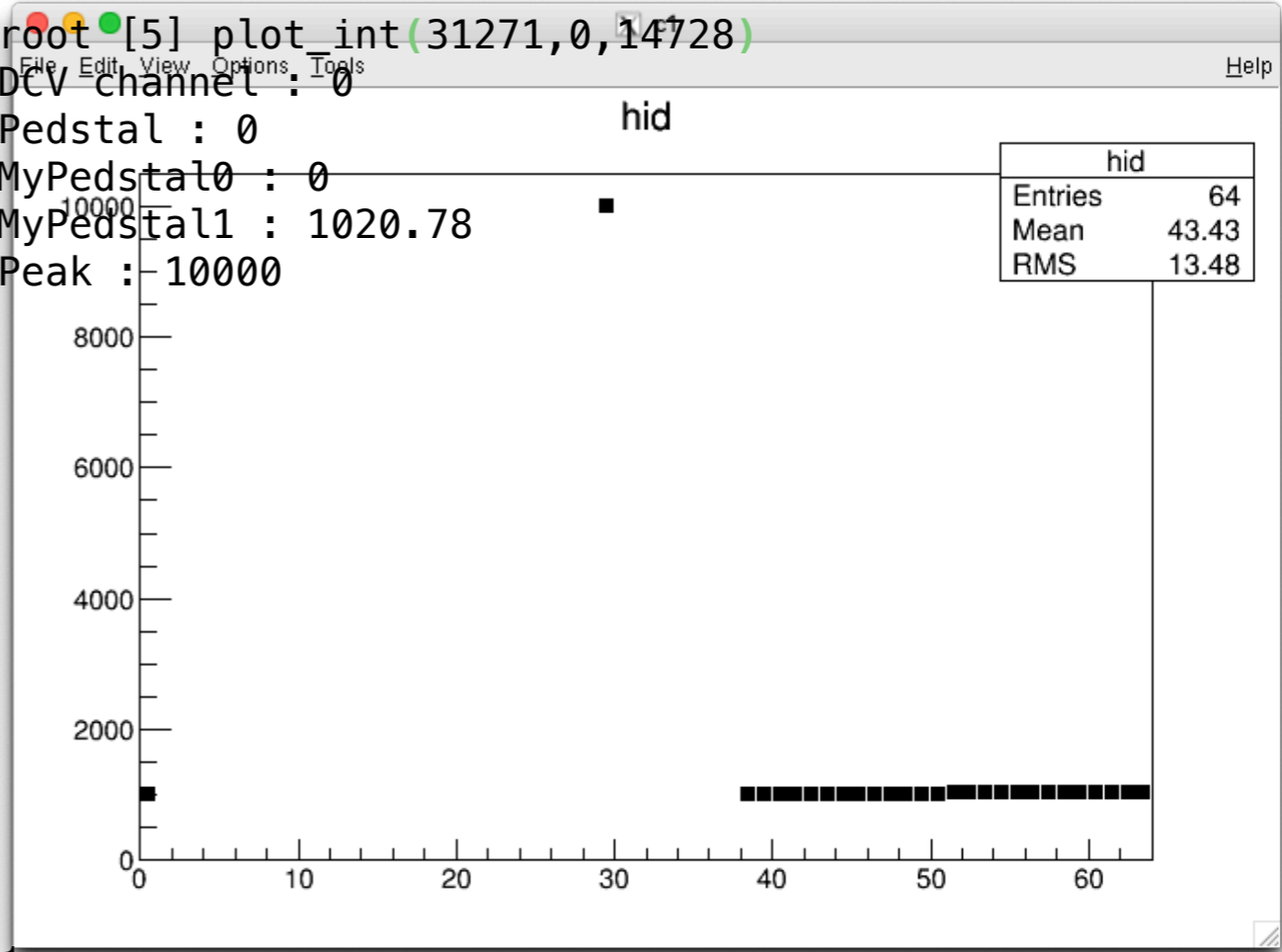
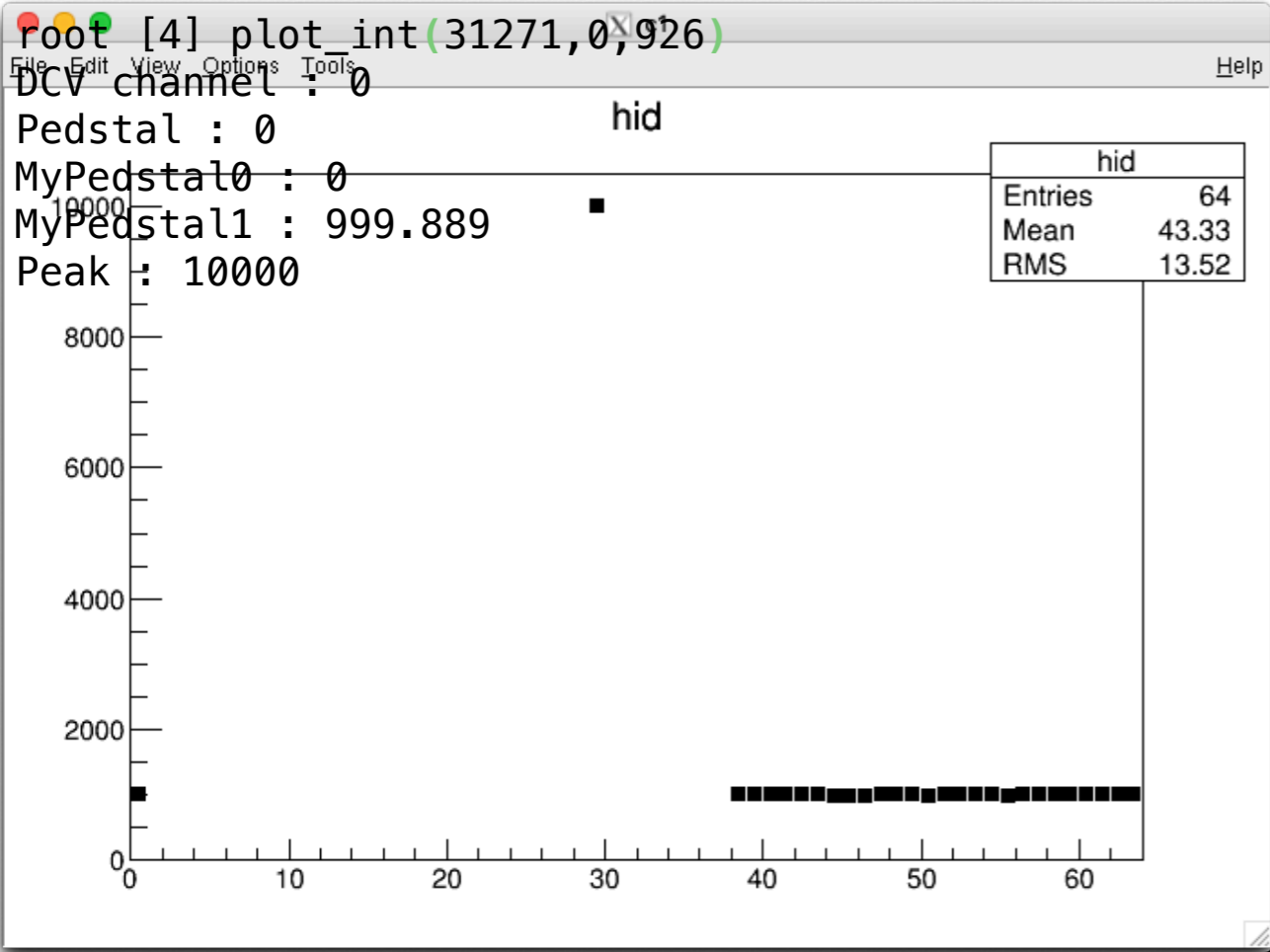
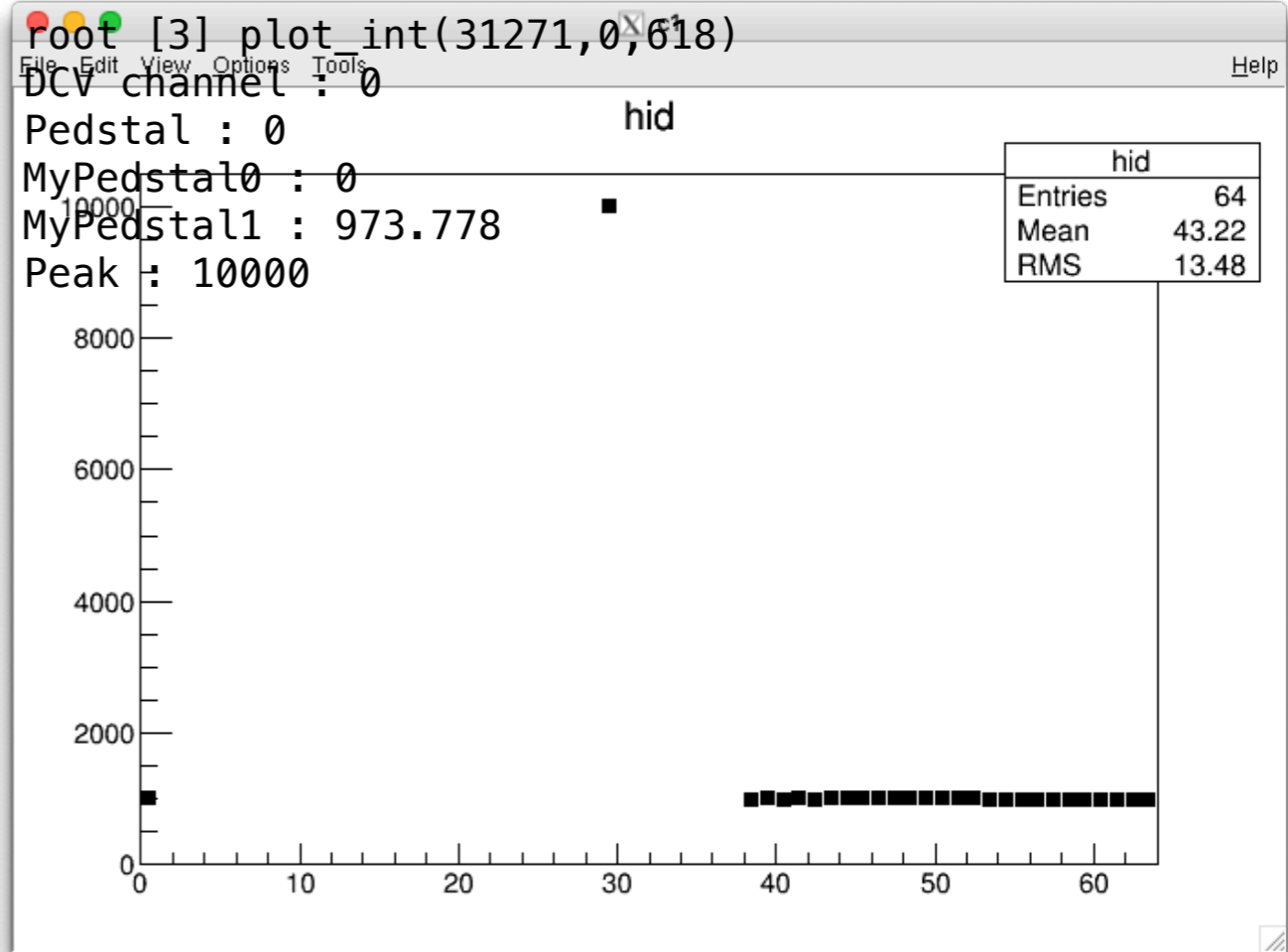
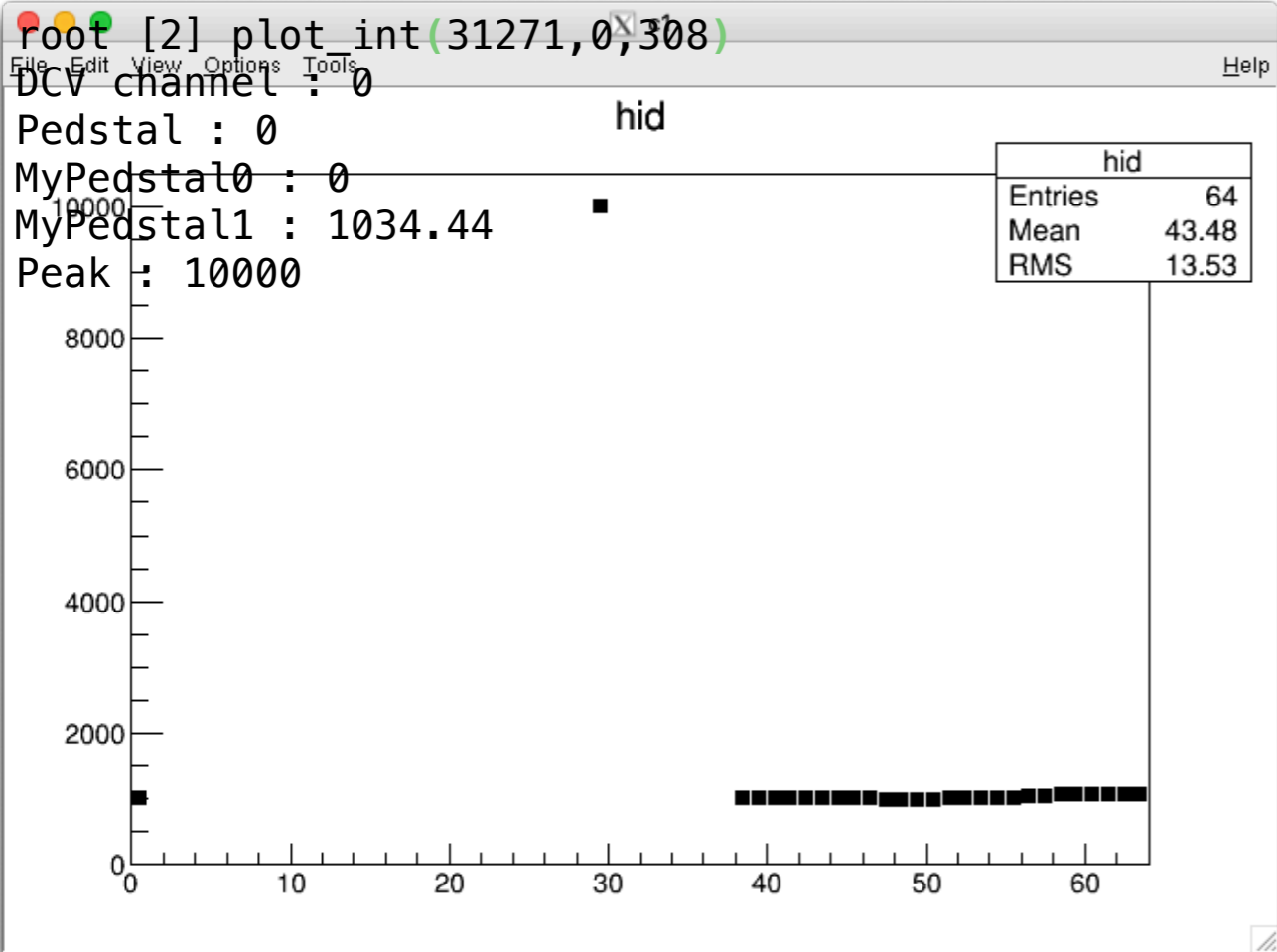


# Calibration Factor

Attenuation length !

# Pulse Shape

9 October, 2019  
HongMin KIM



```
root [4] tout->Scan("DCVPedestal[0]:DCVPeak[0]","DCVPedestal[0] == 0")
```

```
*****
*   Row   * DCVPedest * DCVPeak[0 * SpillNo * *   *   *   *   *
*****
*     0   *     0   *   10000 *     2 * *   7692 *   0 *   10000 *   27 *
*   308   *     0   *   10000 *     3 * *   7999 *   0 *   10000 *   28 *
*   618   *     0   *   10000 *     4 * *   8308 *   0 *   10000 *   29 *
*   926   *     0   *   10000 *     5 * *   8614 *   0 *   10000 *   30 *
*  1238   *     0   *   10000 *     6 * *   8917 *   0 *   10000 *   31 *
*  1547   *     0   *   10000 *     7 * *   9225 *   0 *   10000 *   32 *
*  1857   *     0   *   10000 *     8 * *   9532 *   0 *   10000 *   33 *
*  2158   *     0   *   10000 *     9 * *   9834 *   0 *   10000 *   34 *
*  2468   *     0   *   10000 *    10 * *  10139 *   0 *   10000 *   35 *
*  2780   *     0   *   10000 *    11 * *  10442 *   0 *   10000 *   36 *
*  3091   *     0   *   10000 *    12 * *  10749 *   0 *   10000 *   37 *
*  3395   *     0   *   10000 *    13 * *  11049 *   0 *   10000 *   38 *
*  3699   *     0   *   10000 *    14 * *  11355 *   0 *   10000 *   39 *
*  3998   *     0   *   10000 *    15 * *  11657 *   0 *   10000 *   40 *
*  4308   *     0   *   10000 *    16 * *  11964 *   0 *   10000 *   41 *
*  4619   *     0   *   10000 *    17 * *  12274 *   0 *   10000 *   42 *
*  4932   *     0   *   10000 *    18 * *  12584 *   0 *   10000 *   43 *
*  5240   *     0   *   10000 *    19 * *  12892 *   0 *   10000 *   44 *
*  5545   *     0   *   10000 *    20 * *  13202 *   0 *   10000 *   45 *
*  5851   *     0   *   10000 *    21 * *  13502 *   0 *   10000 *   46 *
*  6164   *     0   *   10000 *    22 * *  13809 *   0 *   10000 *   47 *
*  6468   *     0   *   10000 *    23 * *  14116 *   0 *   10000 *   48 *
*  6771   *     0   *   10000 *    24 * *  14422 *   0 *   10000 *   49 *
*  7079   *     0   *   10000 *    25 * *  14728 *   0 *   10000 *   50 *
*  7387   *     0   *   10000 *    26 * *   *****
*                                     ==> 49 selected entries
*                                     (Long64_t)49
```



## The First Event of Each Spill

"Same List"

```
root [5] tout->Scan("DCVPedestal[0]:DCVPeak[0]","DCVPeak[0] == 10000")
root [7] tout->Scan("DCVPedestal[2]:DCVPeak[2]","DCVPeak[2] == 10000")
root [6] tout->Scan("DCVPedestal[1]:DCVPeak[1]","DCVPeak[1] == 10000")
root [8] tout->Scan("DCVPedestal[2]:DCVPeak[2]","DCVPedestal[2] == 0")
root [9] tout->Scan("DCVPedestal[20]:DCVPeak[20]","DCVPedestal[20] == 0")
root [10] tout->Scan("DCVPedestal[31]:DCVPeak[31]","DCVPedestal[31] == 0")
```

Run Number = 31271

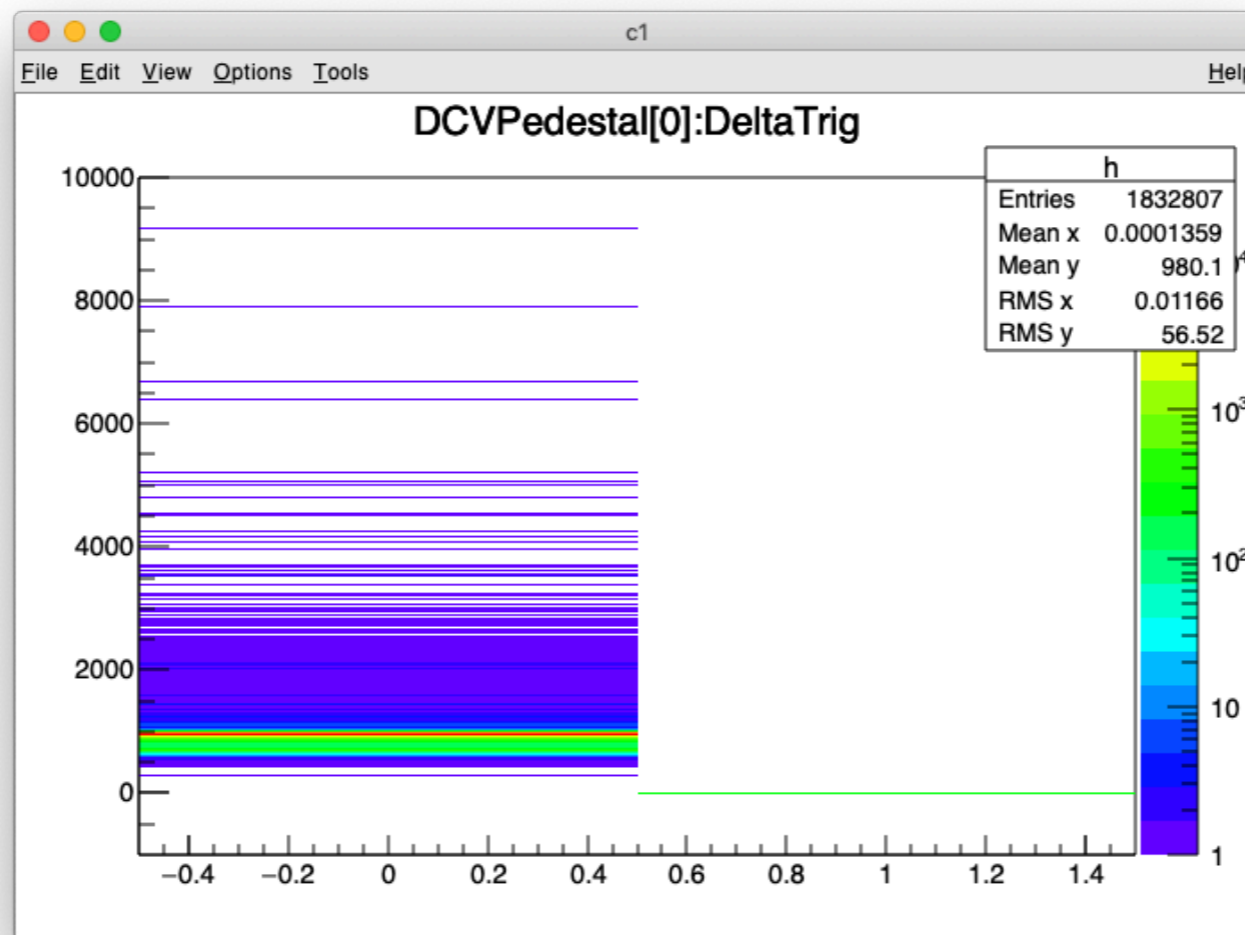
Node = 19, File Number = 0

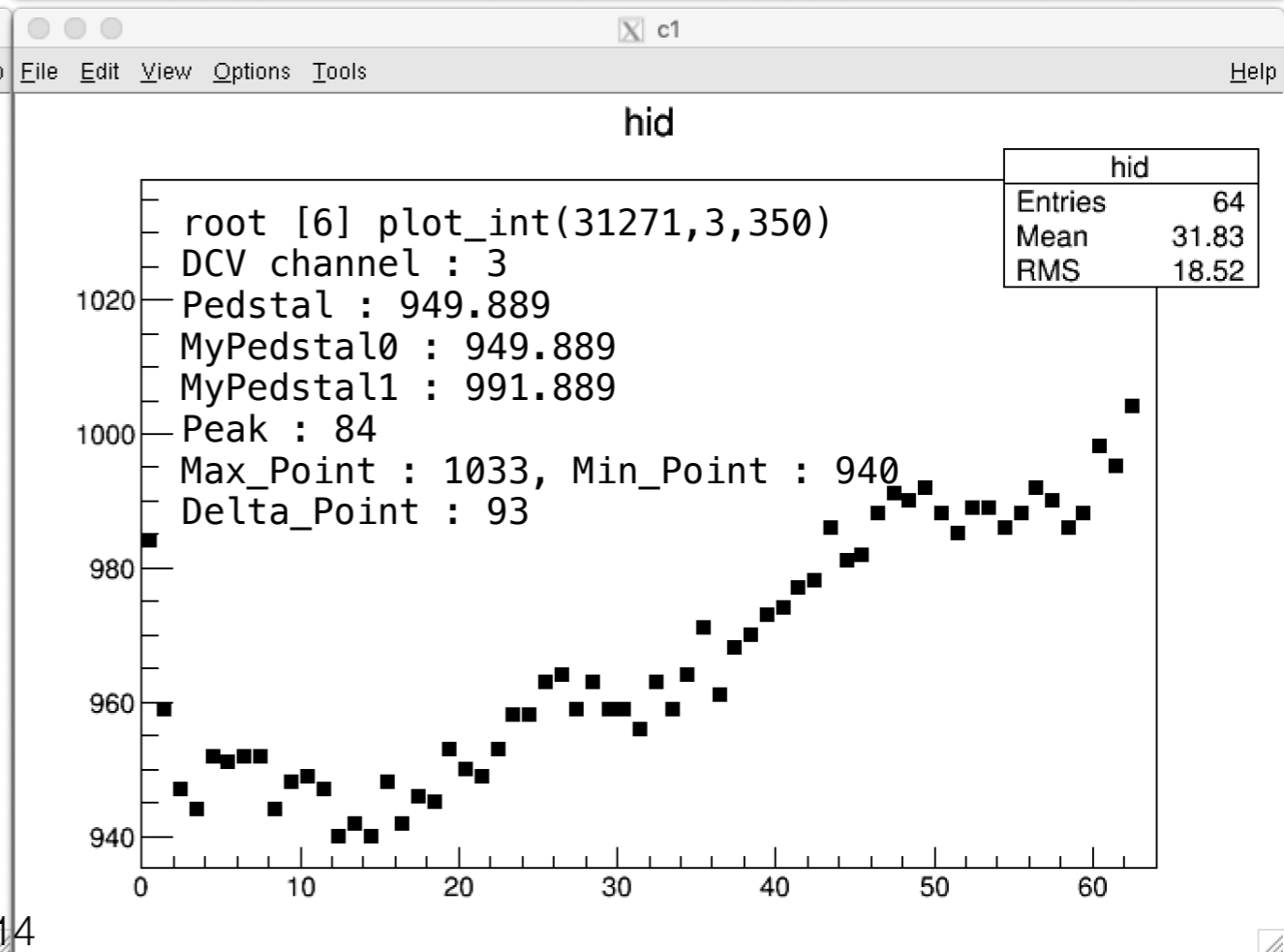
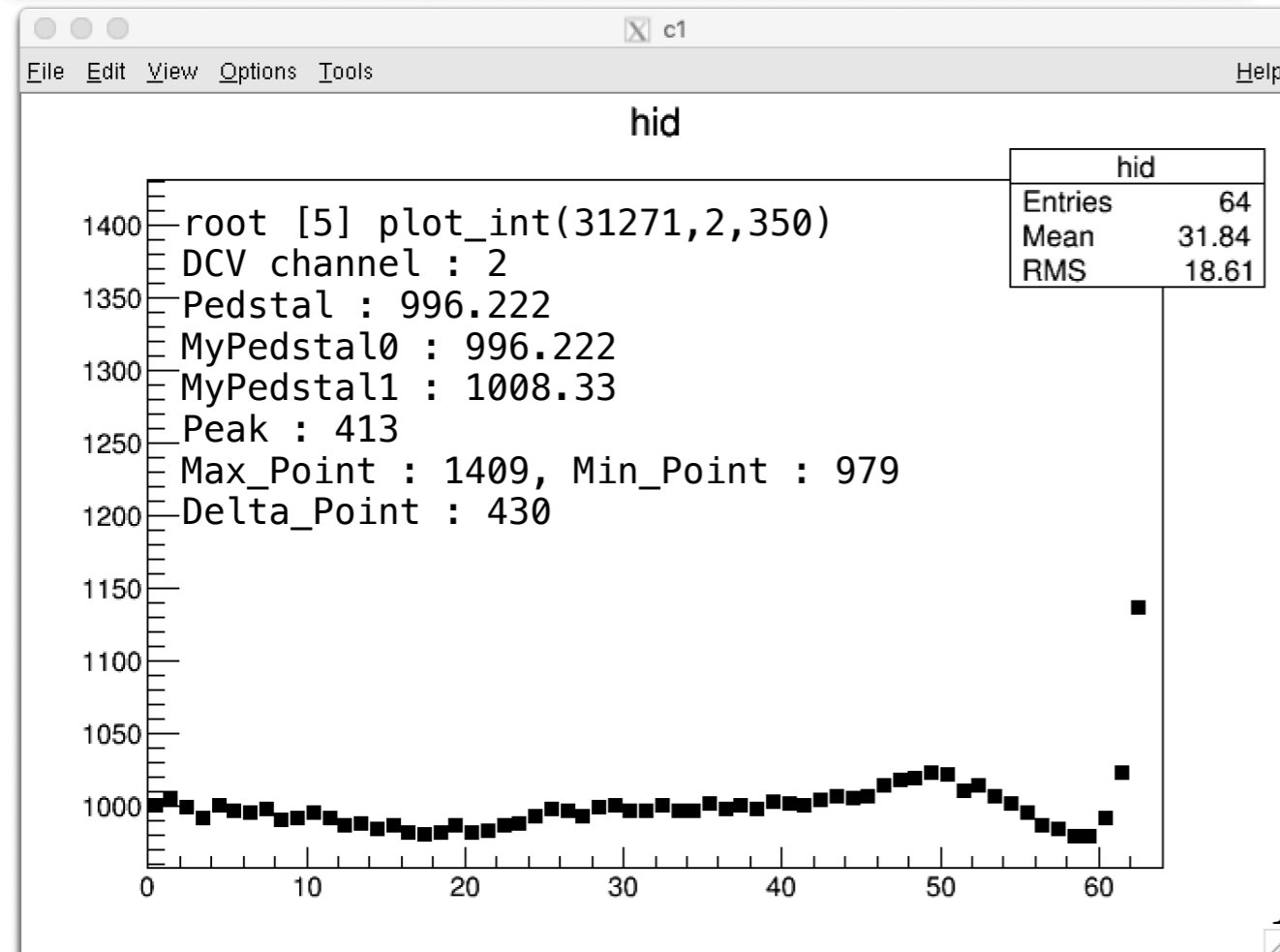
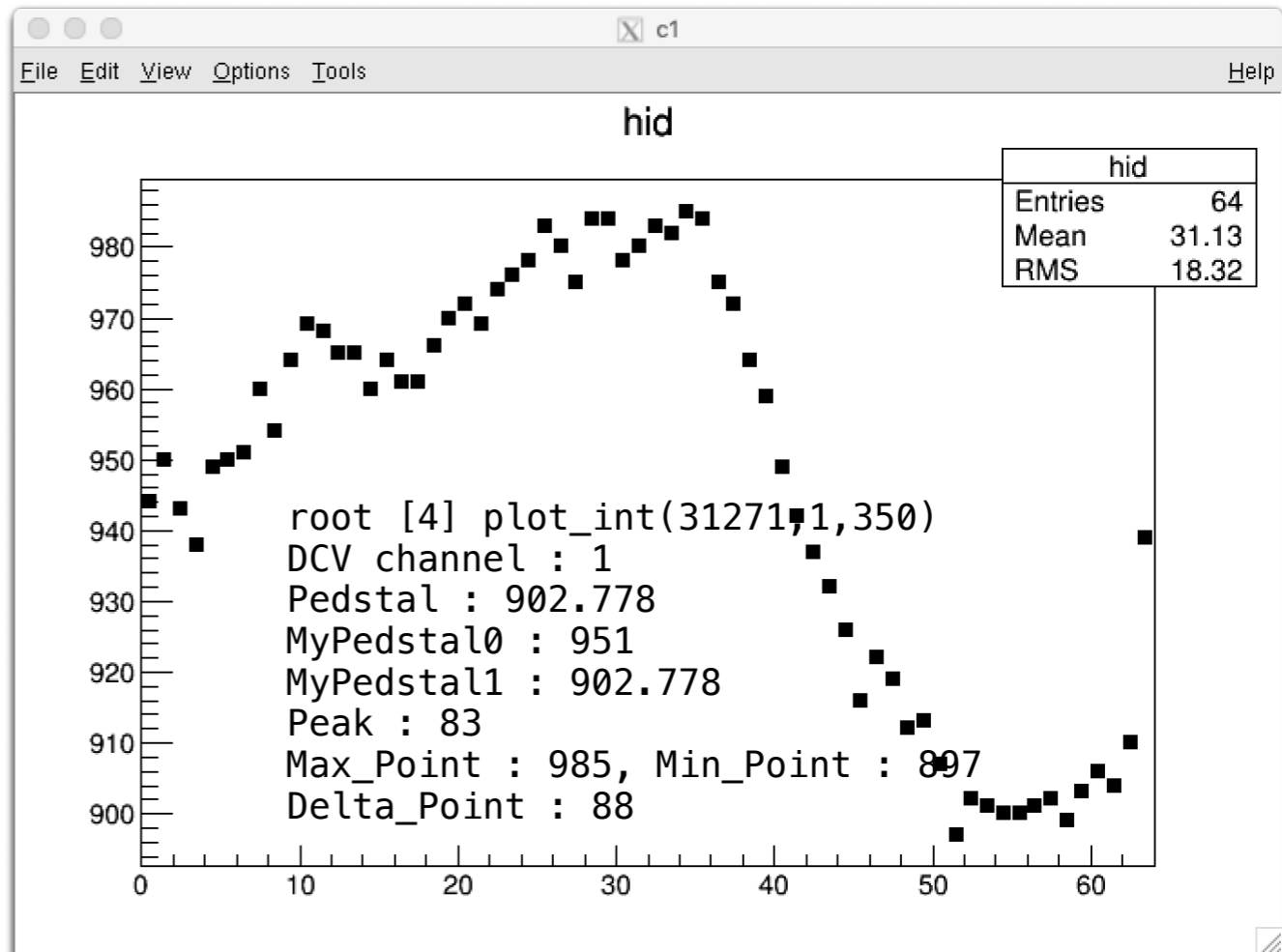
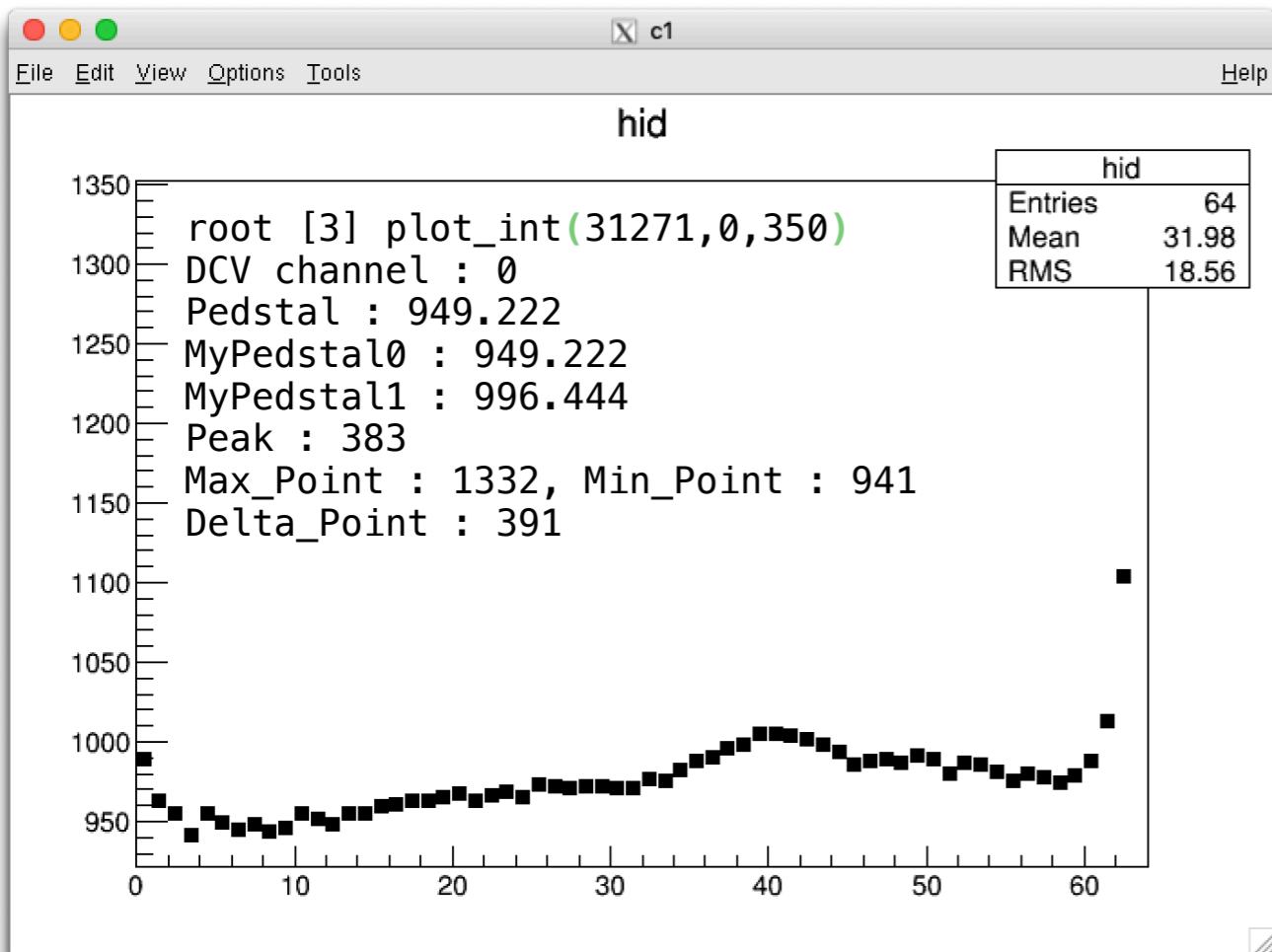
There are 250 Spills,

249 events that is DCVPedestal == 0

# Run 31271

- Total L2 Accepted = 3,662,039
- The number of Dump DST File = 1,832,807
- The number of Trig#2. CsI(Et) = 119,334
- The number of abnormal pulse = 249, **DeltaTrig == 1**





# How can we suppress the noise?

- First, We can get the gap of the maximum and the minimum point

```
for(int ievent=0;ievent<nevents;ievent++){
    tin->GetEntry(ievent);

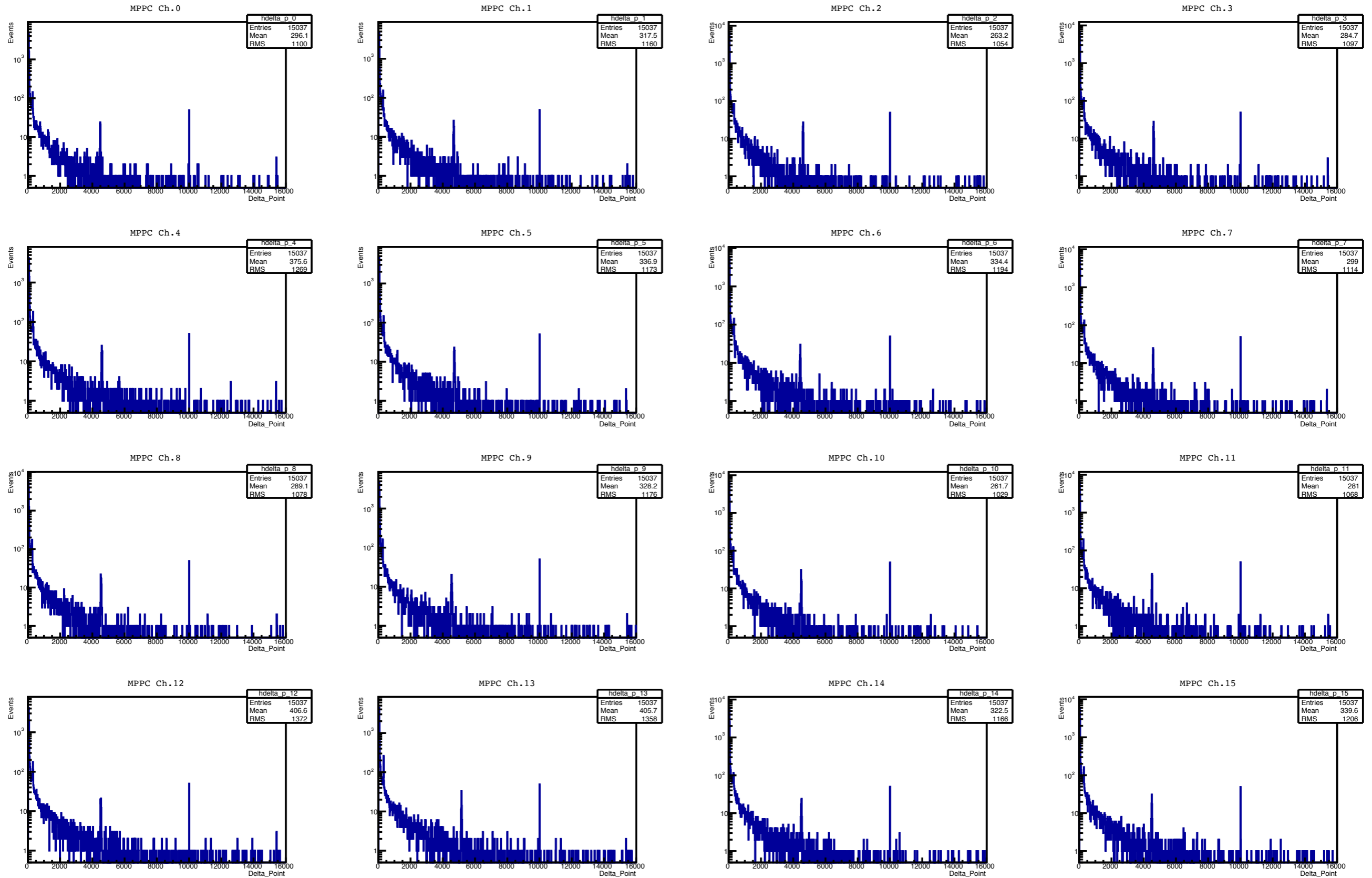
    for(int id=0;id<32;id++){
        max_point[id] = 0;
        min_point[id] = 20000;
        delta_p[id] = 0;
    }

    for(int id=0;id<32;id++){
        for(int ich=0;ich<64;ich++){
            if( Wfm[id][ich] < min_point[id] ) min_point[id] = Wfm[id][ich];
            if( Wfm[id][ich] > max_point[id] ) max_point[id] = Wfm[id][ich];
        }

        delta_p[id] = max_point[id] - min_point[id];

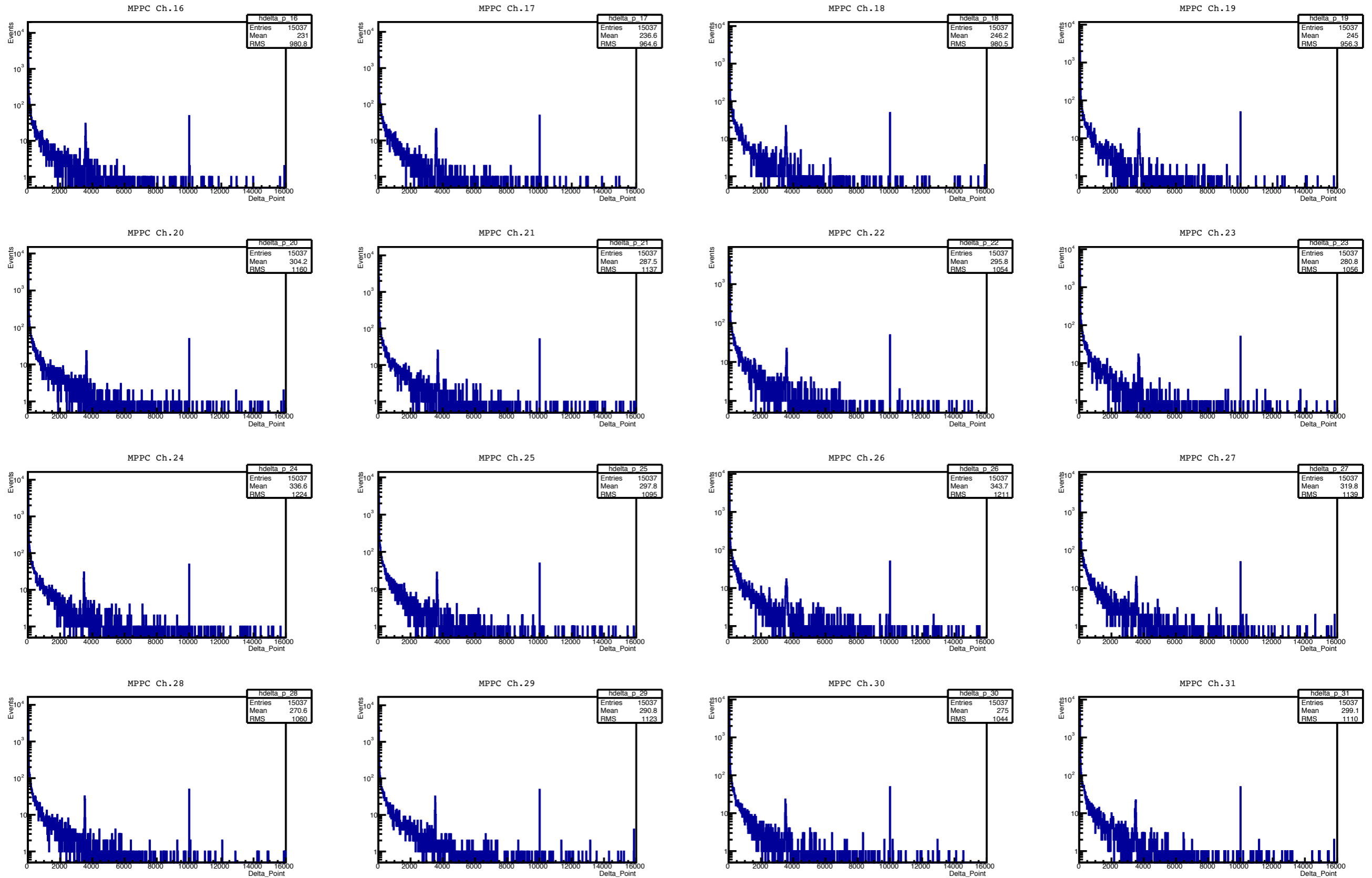
        hdelta_p[id]->Fill(delta_p[id]);
    }
}
```

# Delta point distribution for Run31271(DCV1)



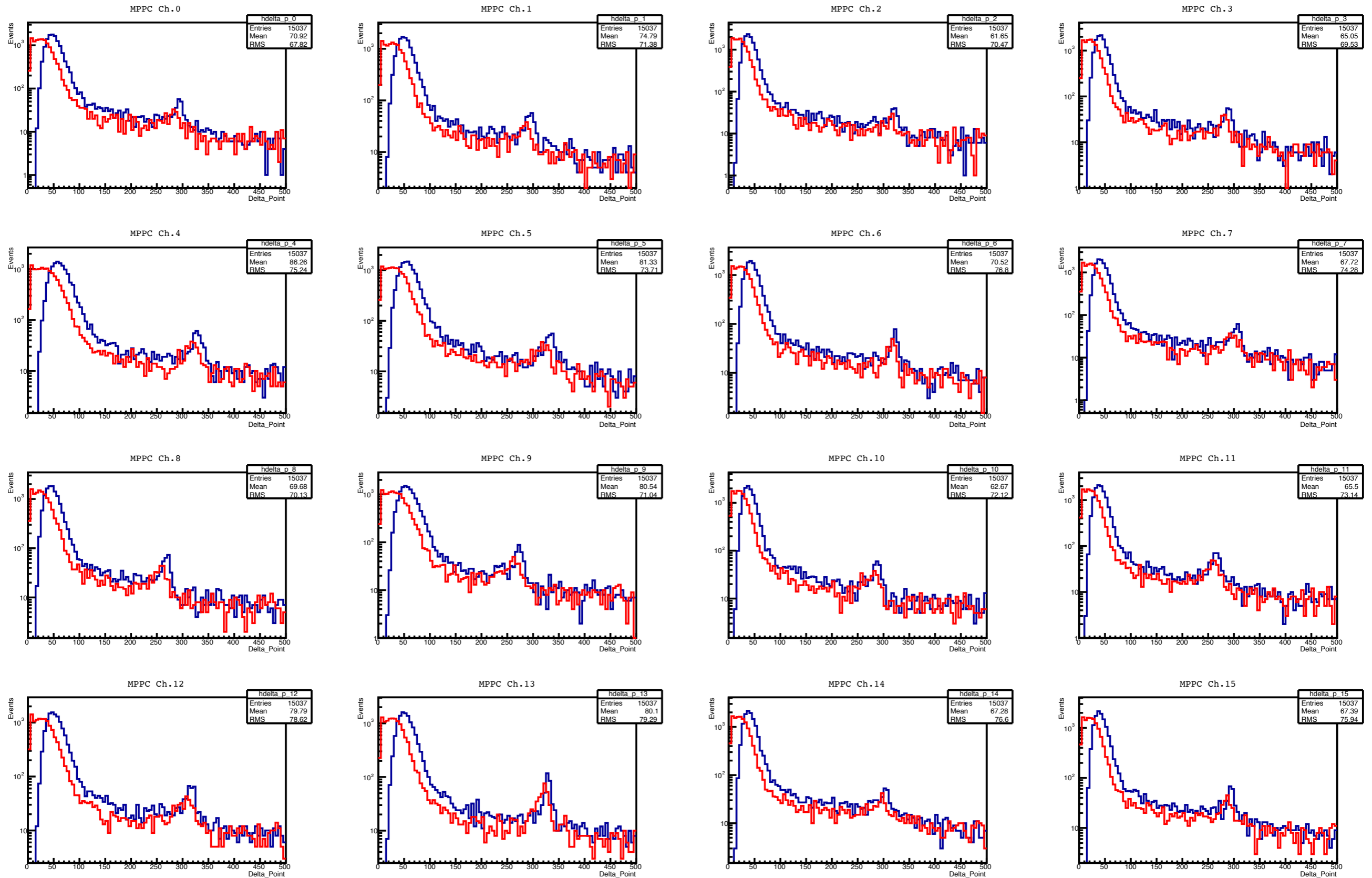


# Delta point distribution for Run31271(DCV2)



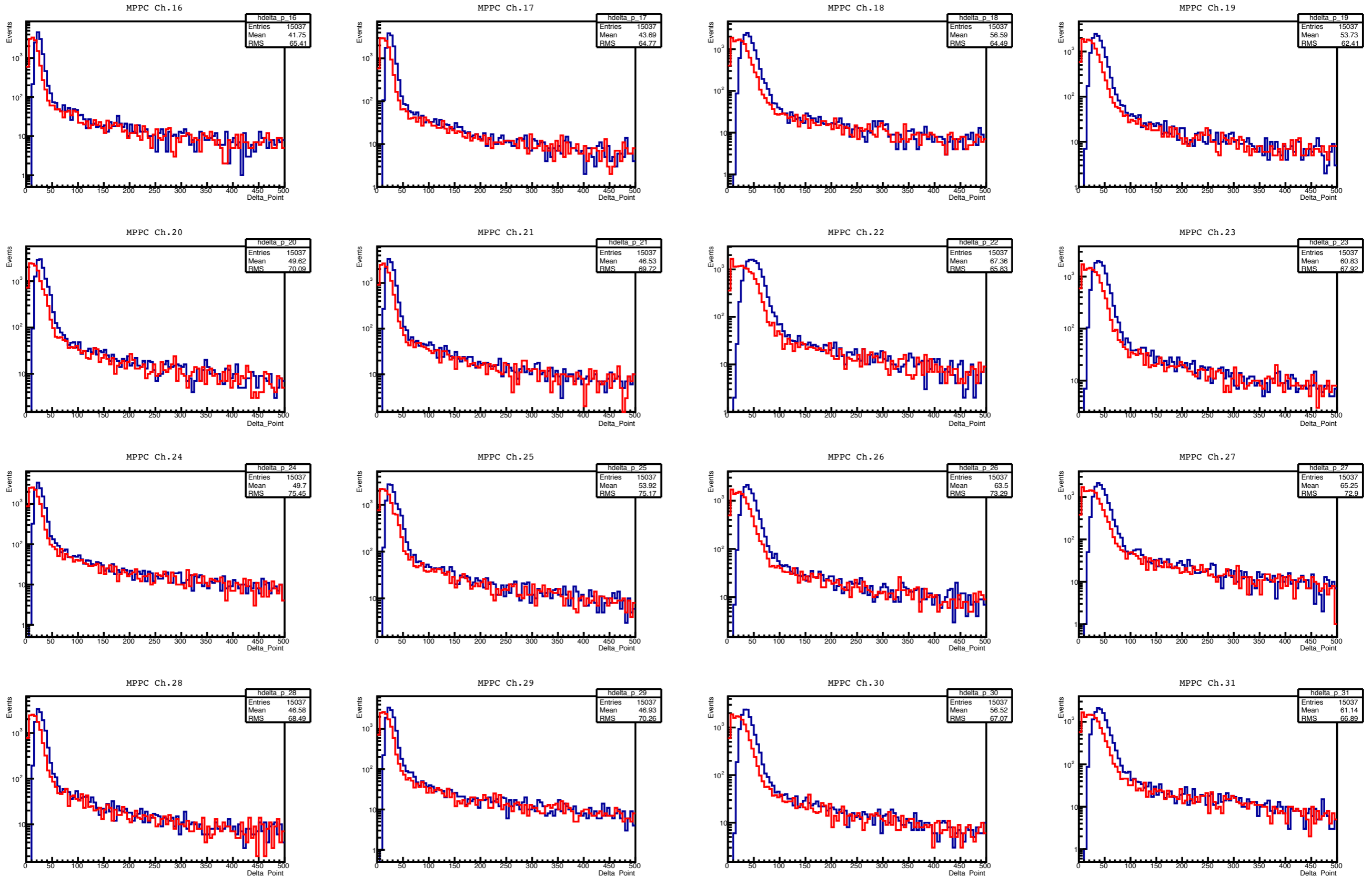
# Delta point distribution for Run31271(DCV1)

Blue : Delta point distribution, Red : DCVPeak distribution



# Delta point distribution for Run31271(DCV2)

Blue : Delta point distribution, Red : DCVPeak distribution

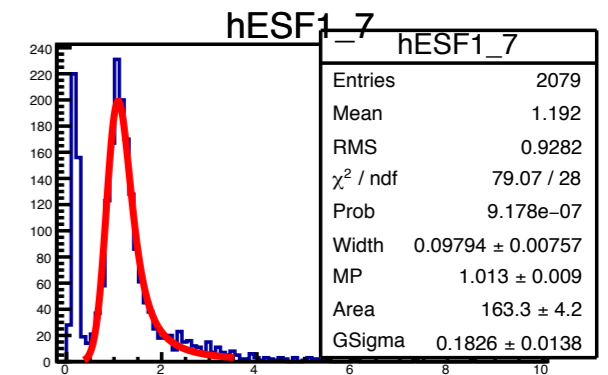
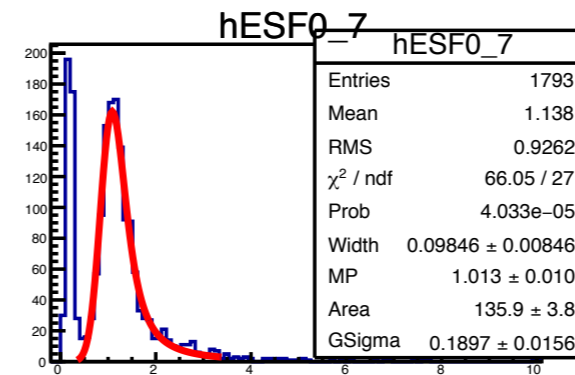
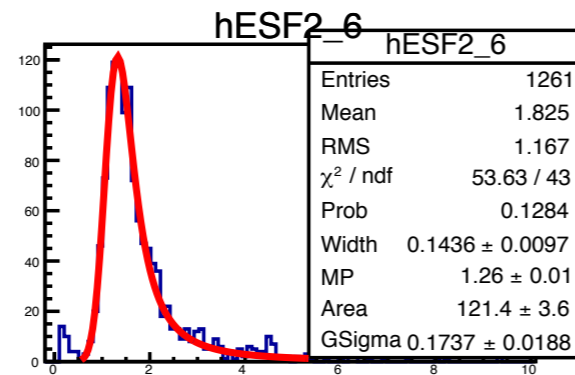
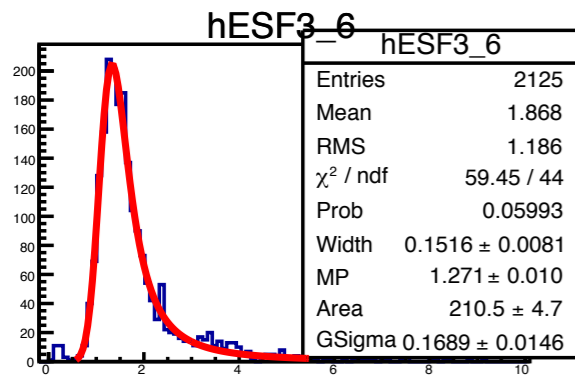
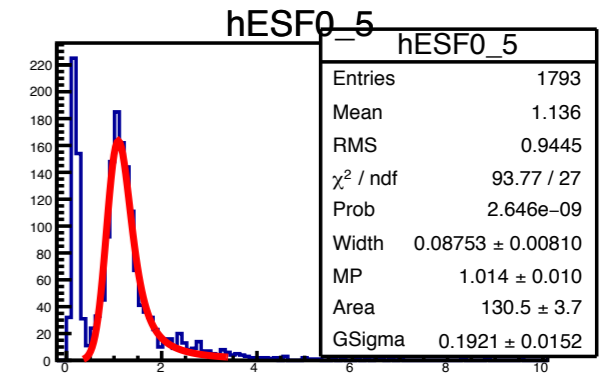
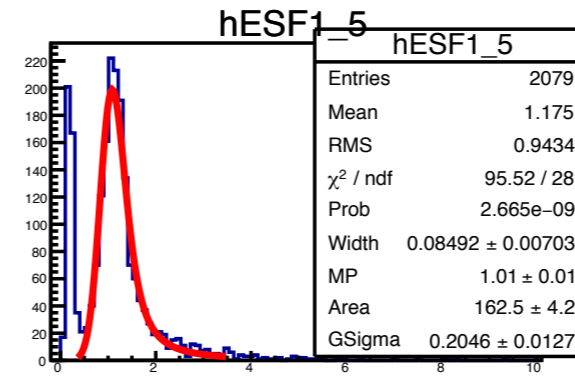
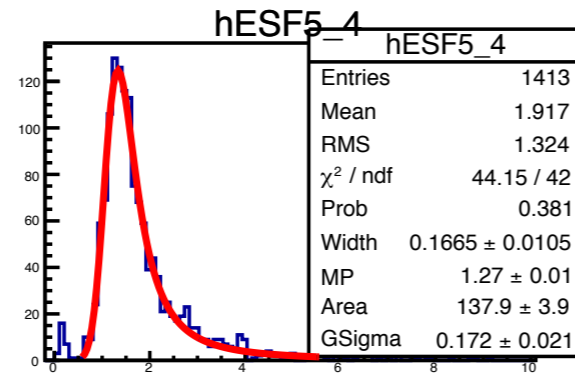
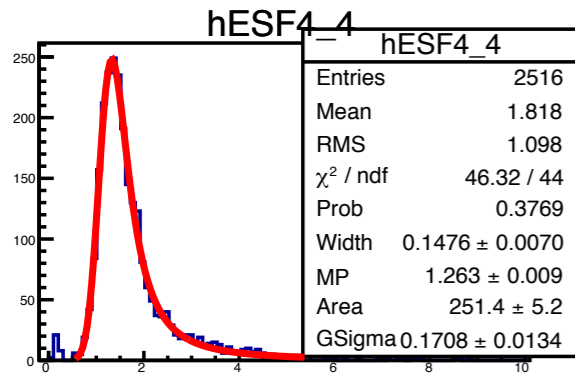
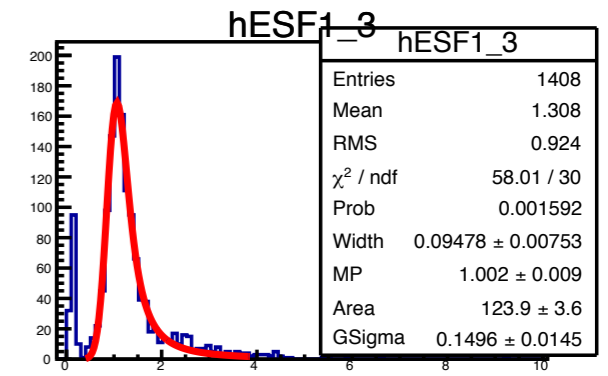
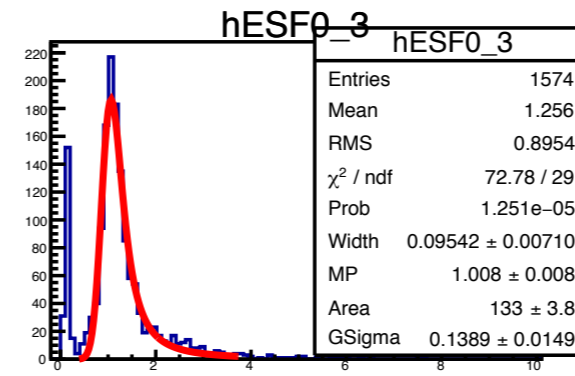
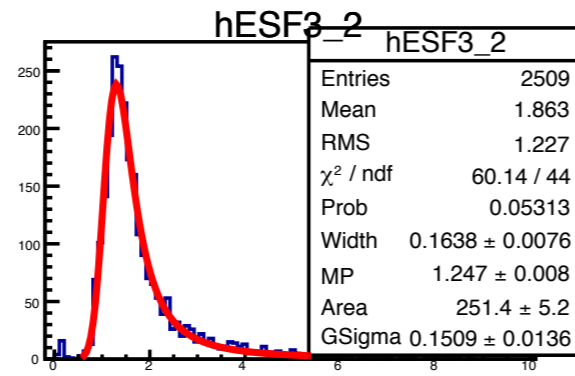
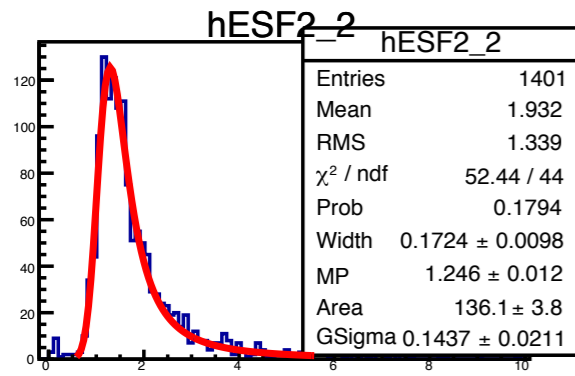
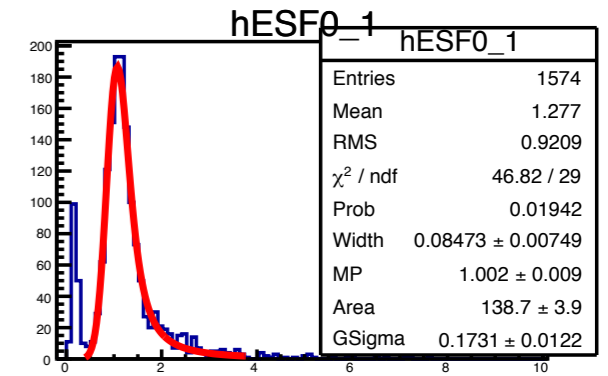
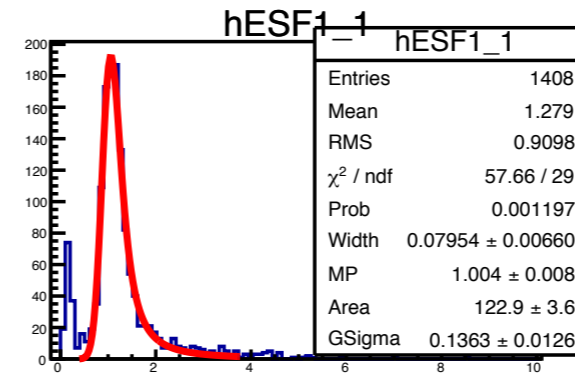
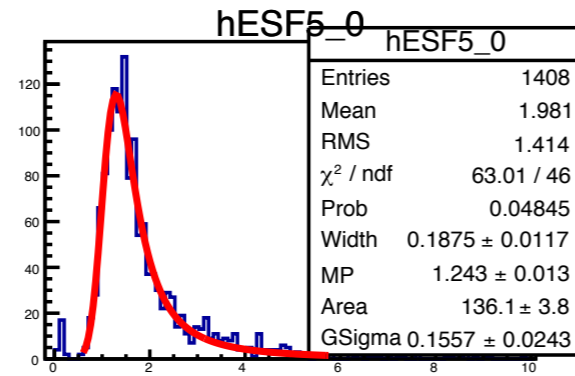
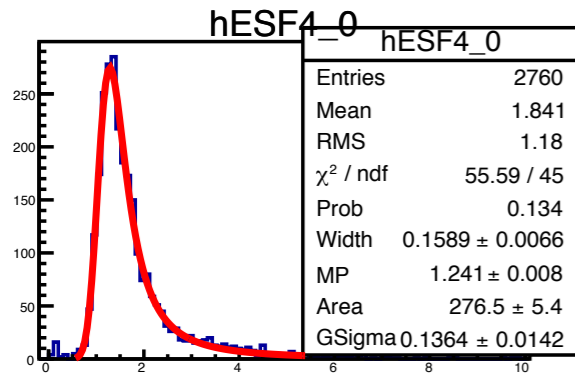


**BACK UP**

# DCVene Distribution Cosmic ray period7

Normalization factor is not applied

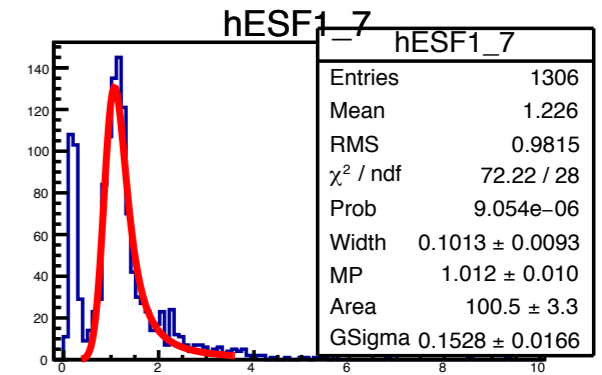
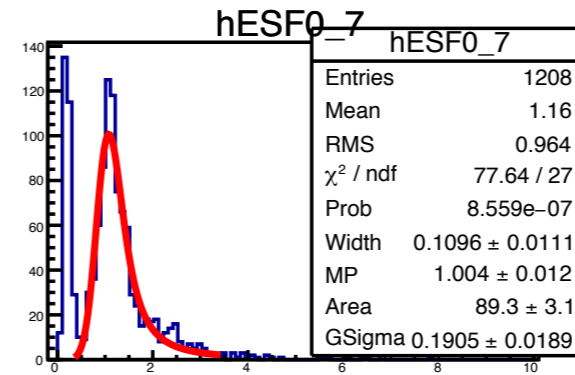
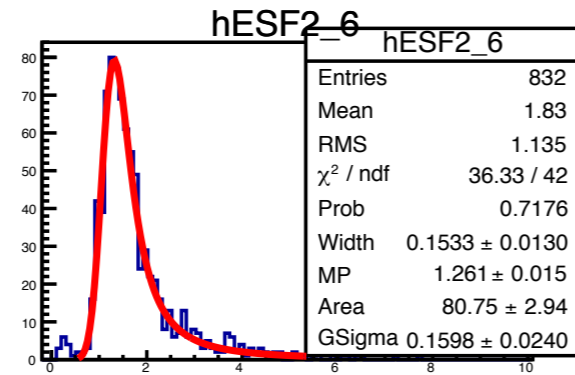
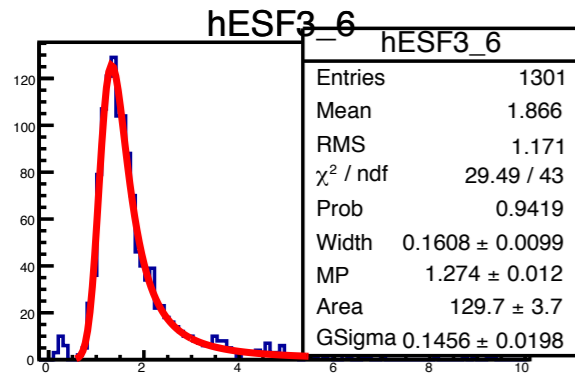
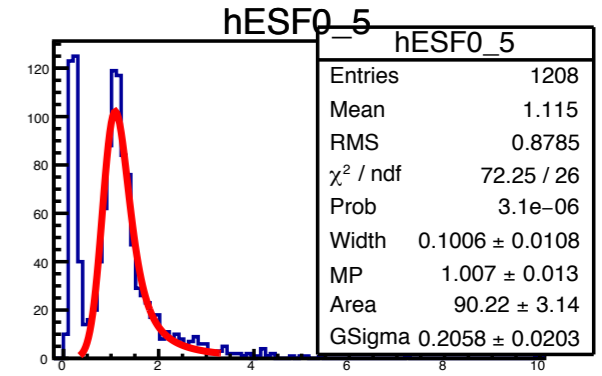
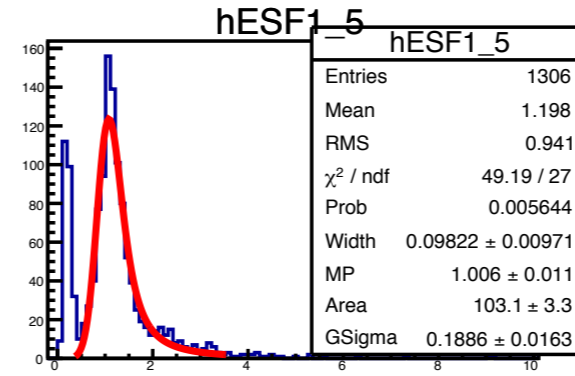
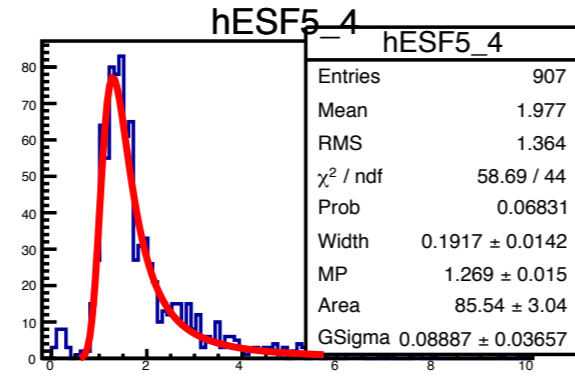
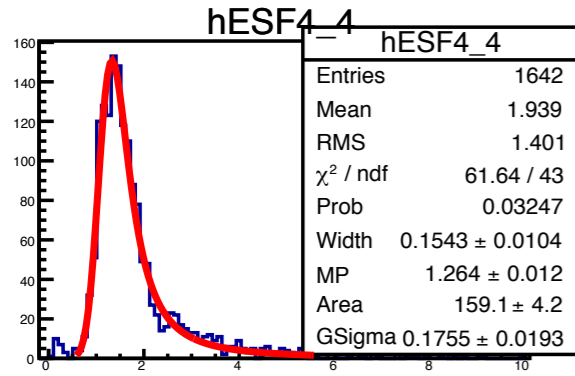
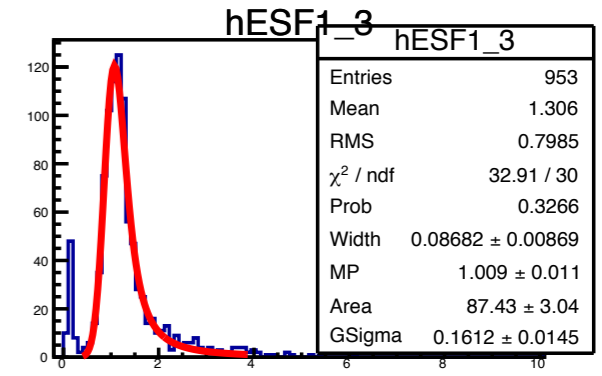
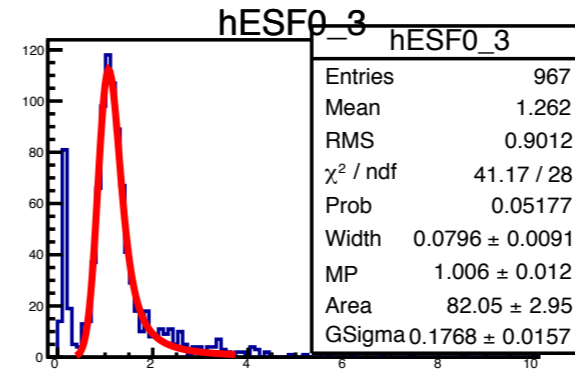
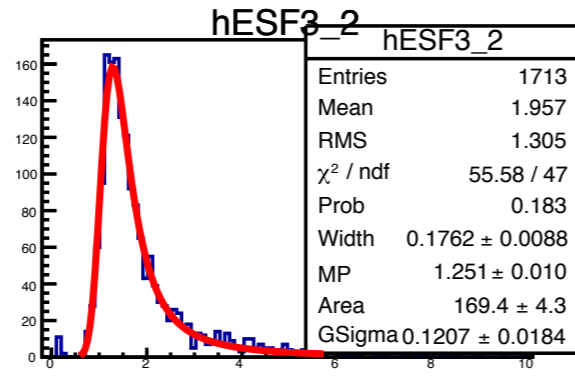
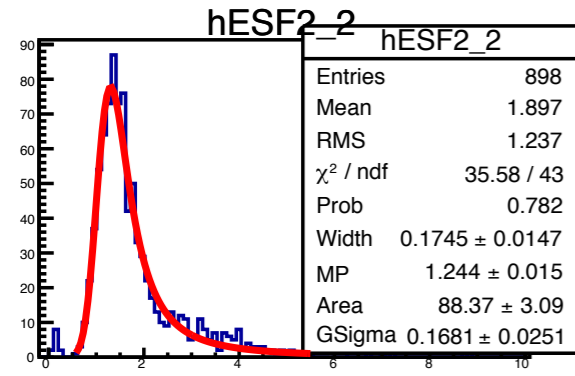
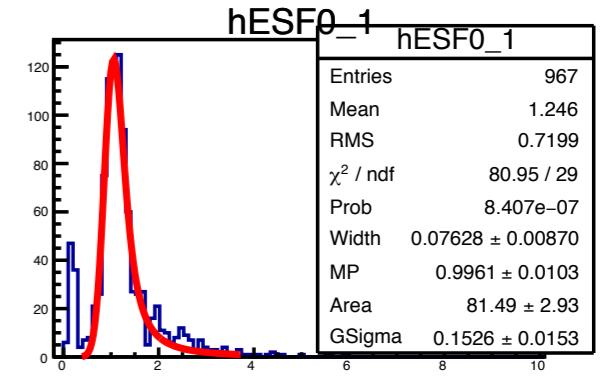
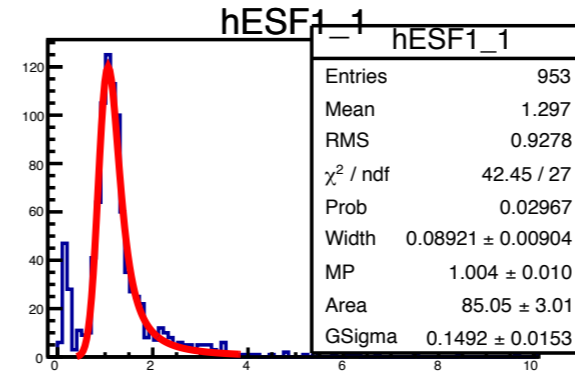
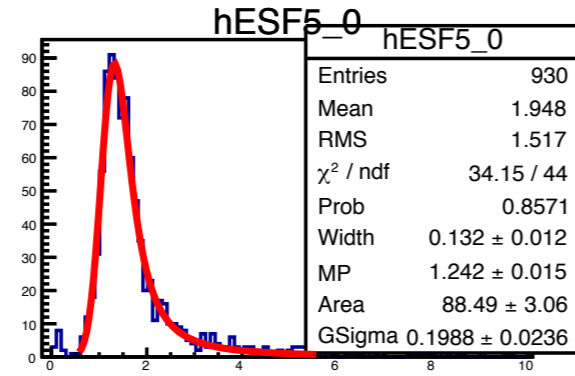
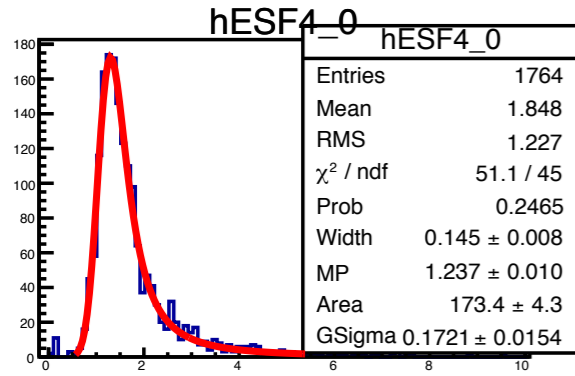
Only new path length correction factor applied



# DCVene Distribution Cosmic ray period8

Normalization factor is not applied

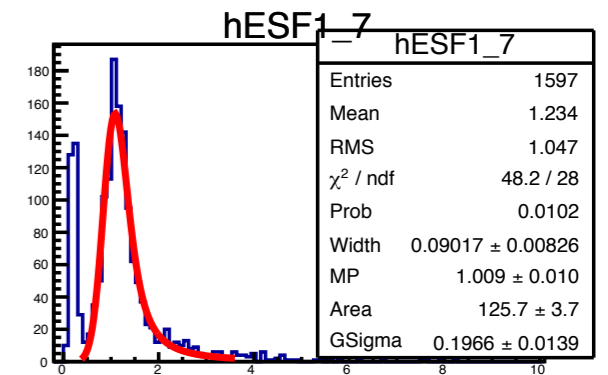
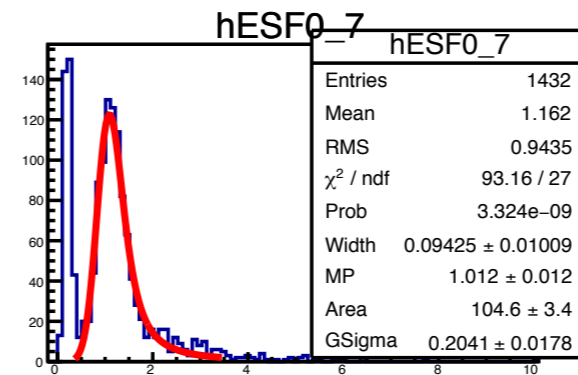
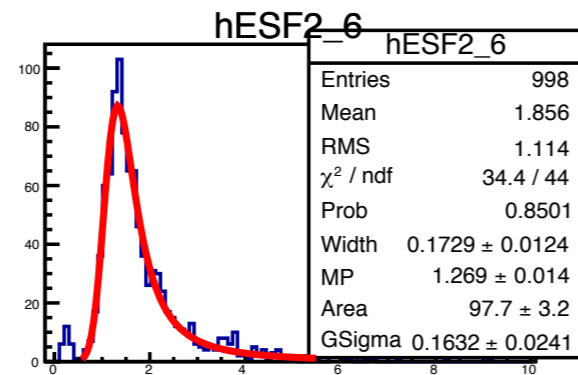
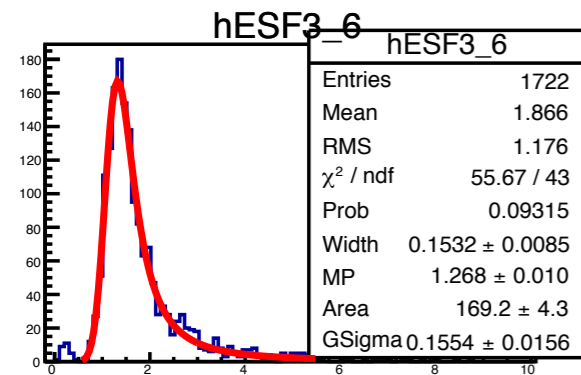
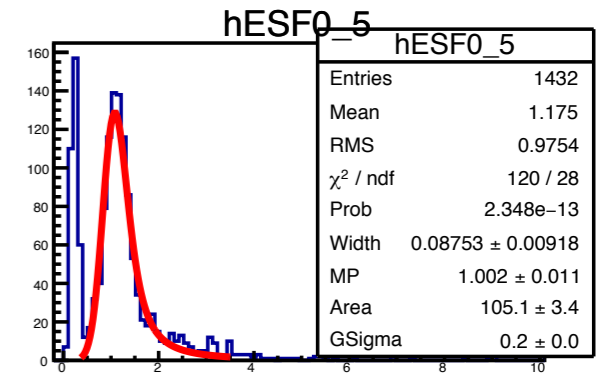
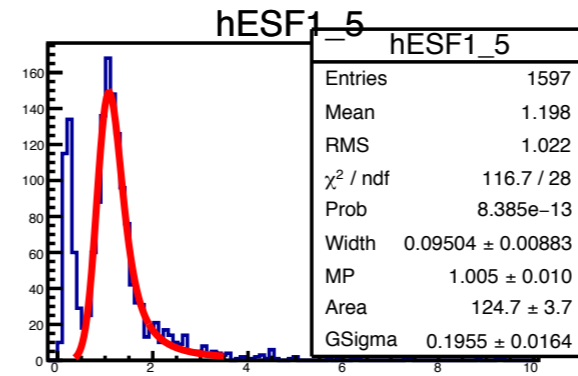
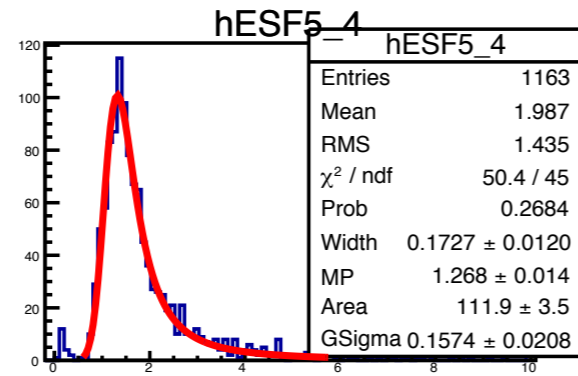
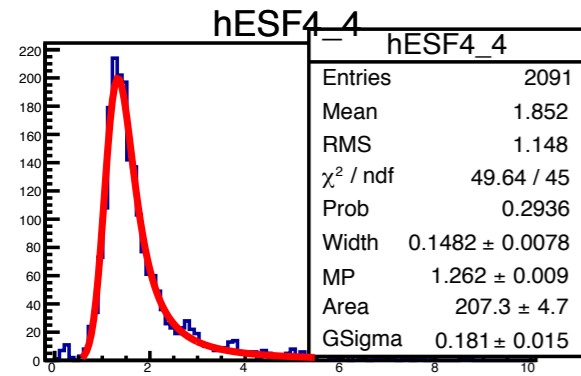
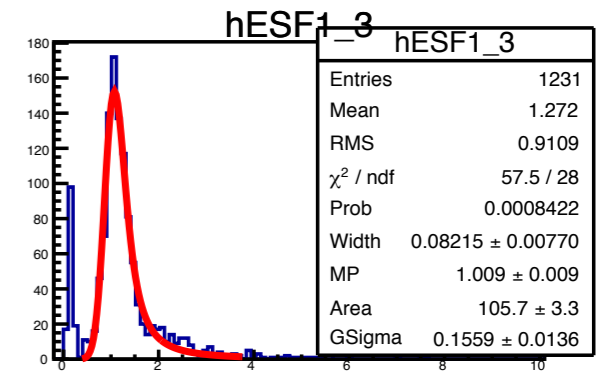
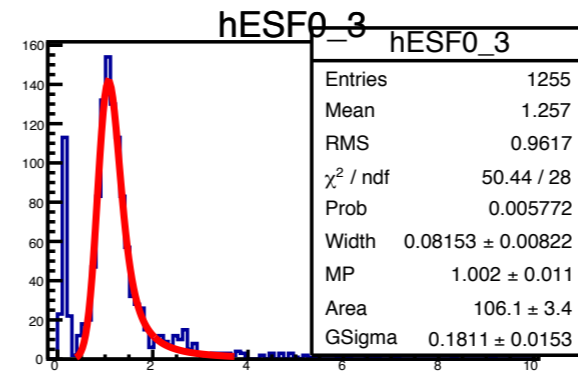
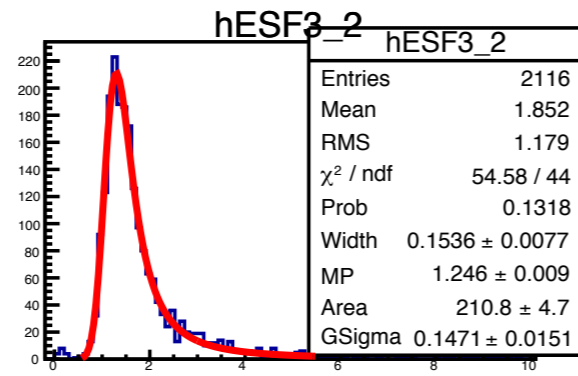
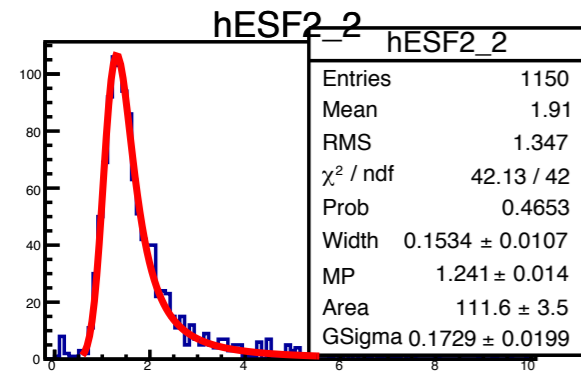
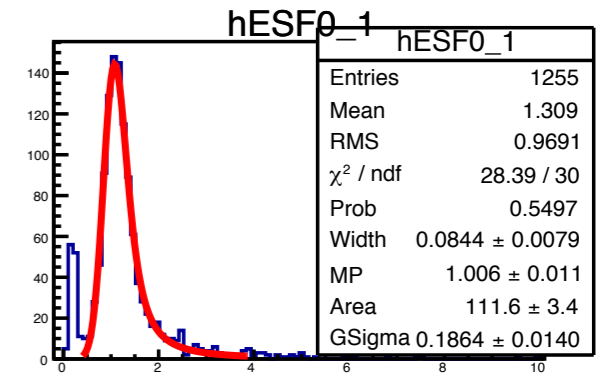
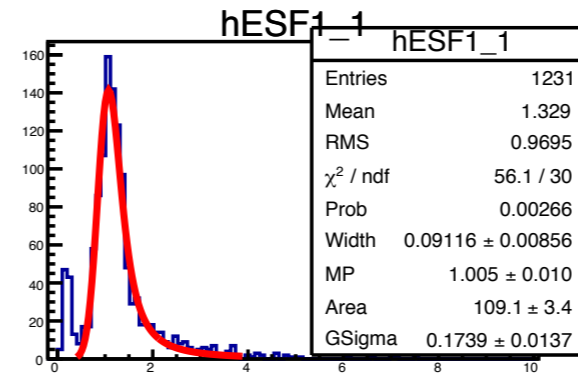
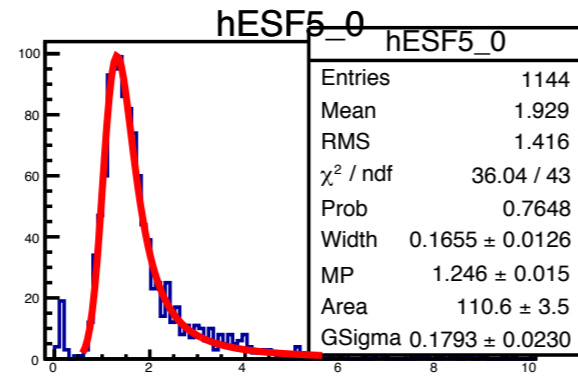
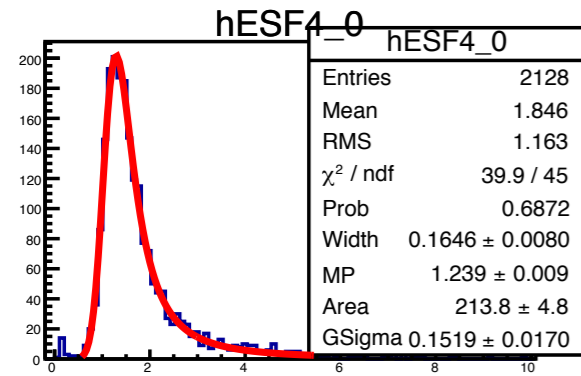
Only new path length correction factor applied



# DCVene Distribution Cosmic ray period9

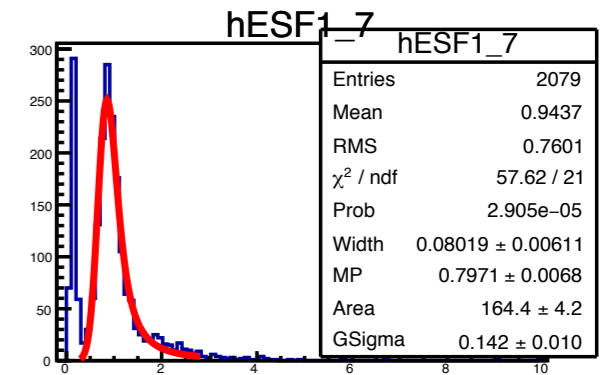
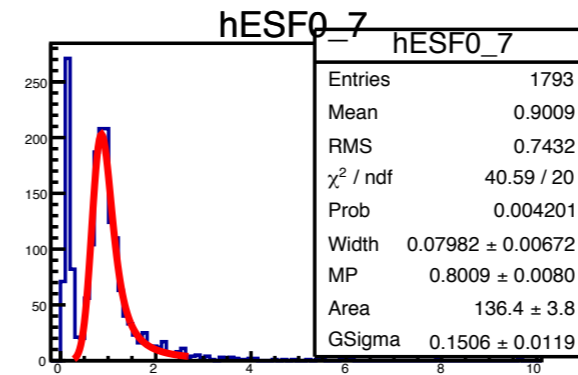
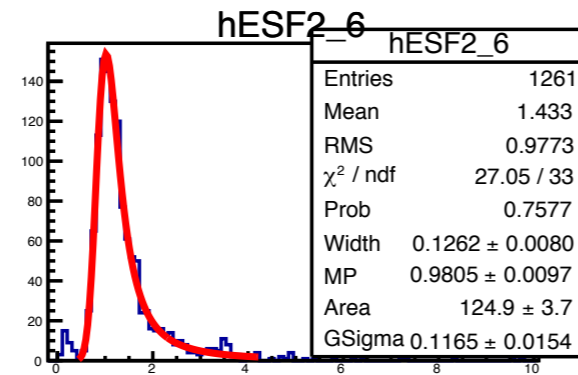
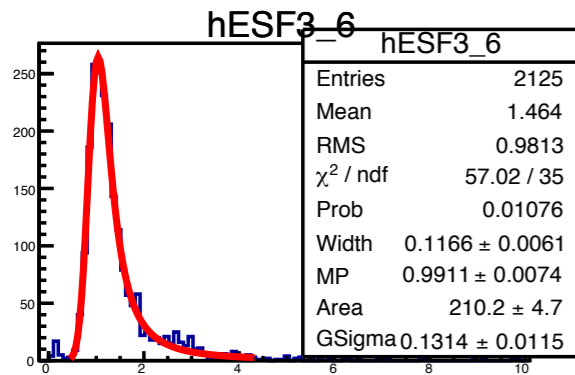
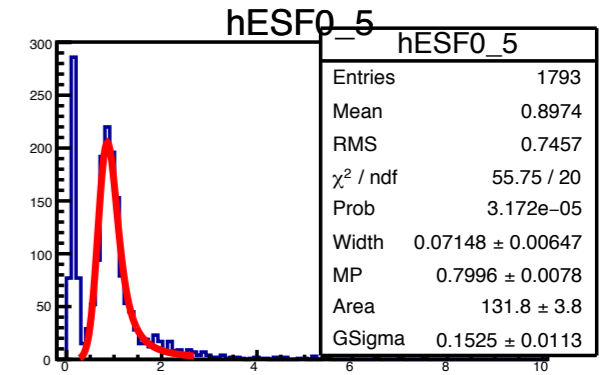
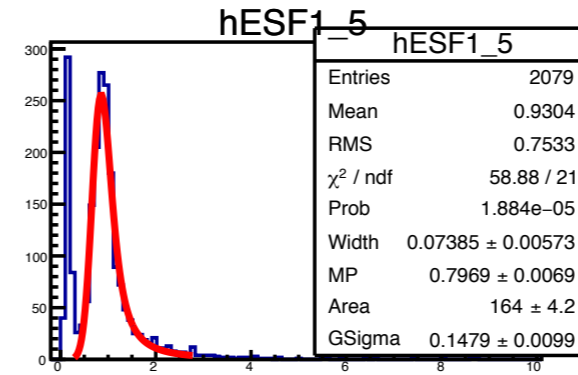
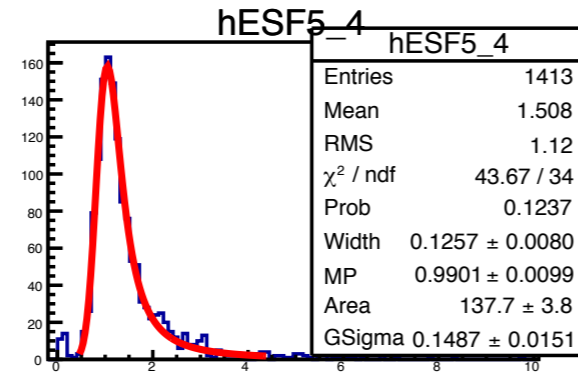
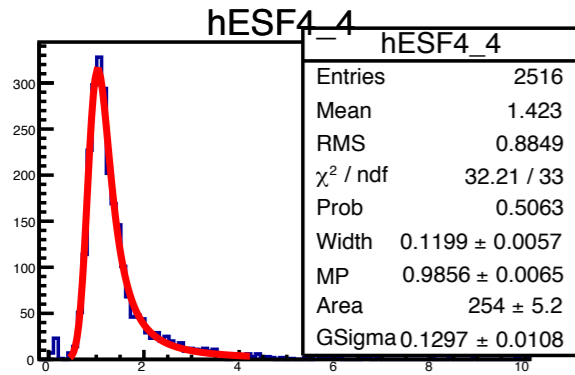
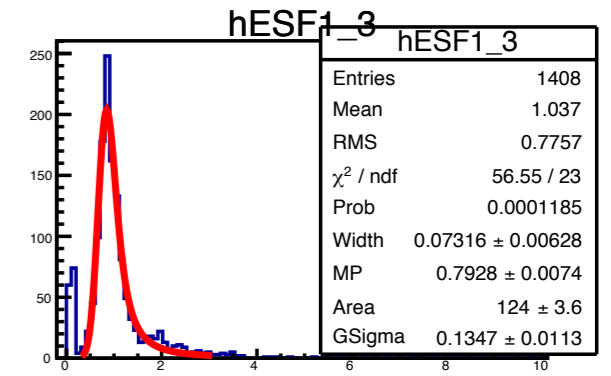
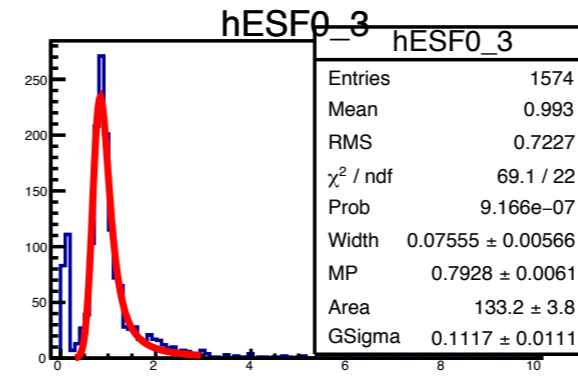
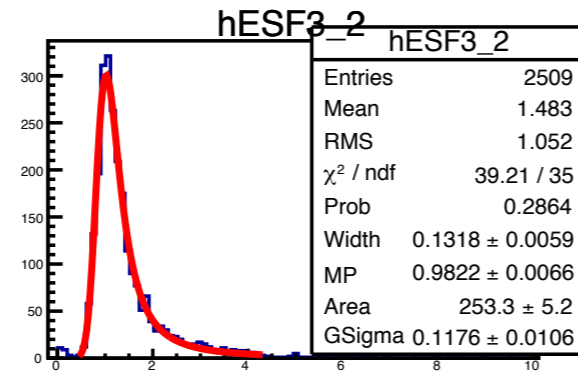
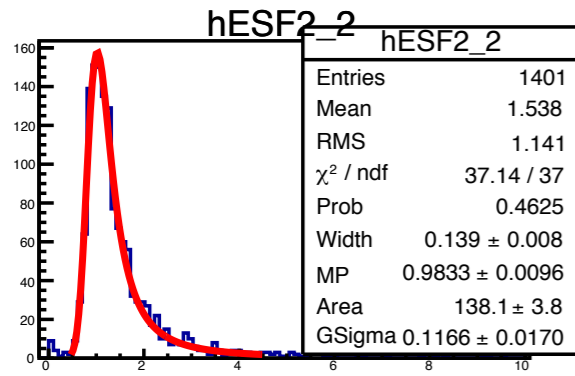
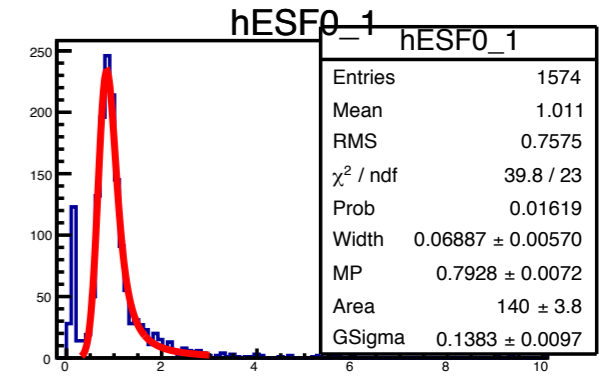
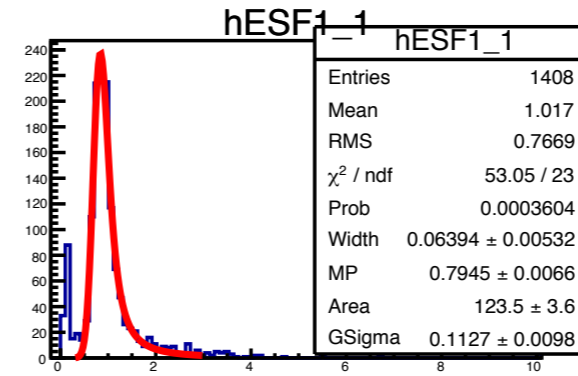
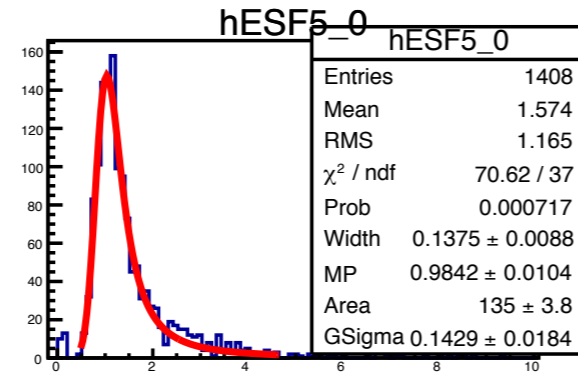
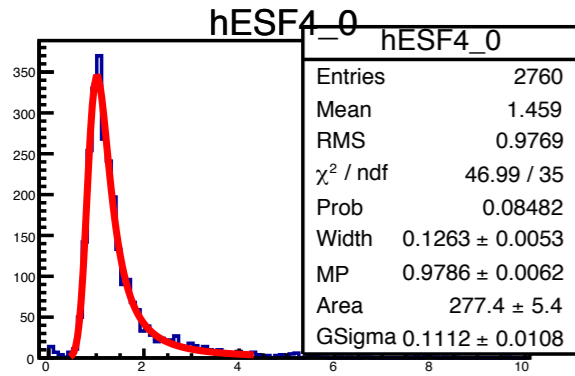
Normalization factor is not applied

Only new path length correction factor applied



# DCVene Distribution Cosmic ray period7

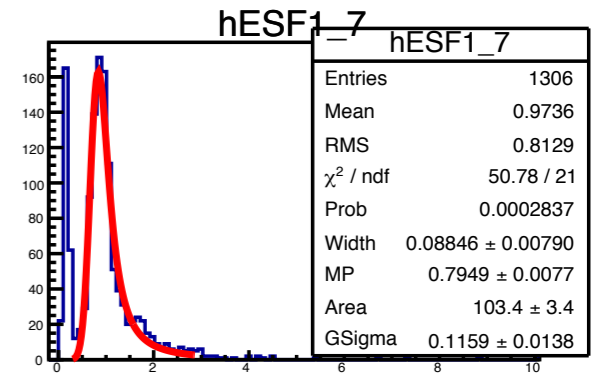
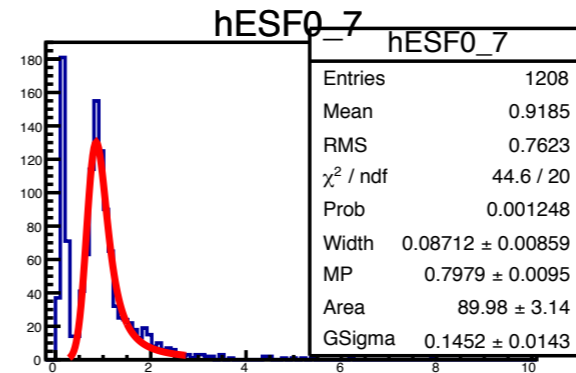
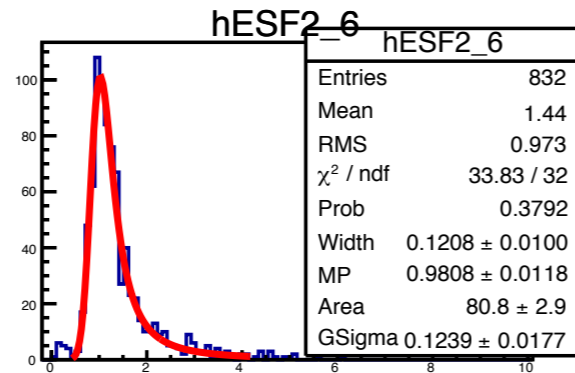
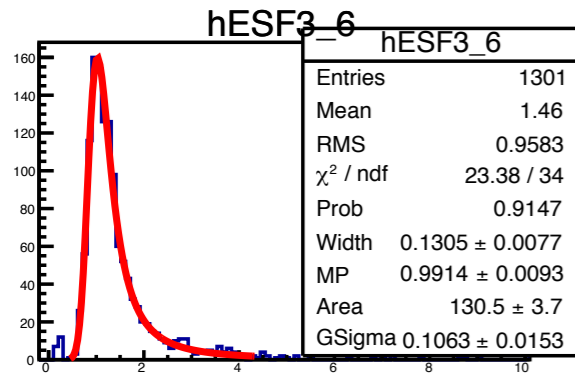
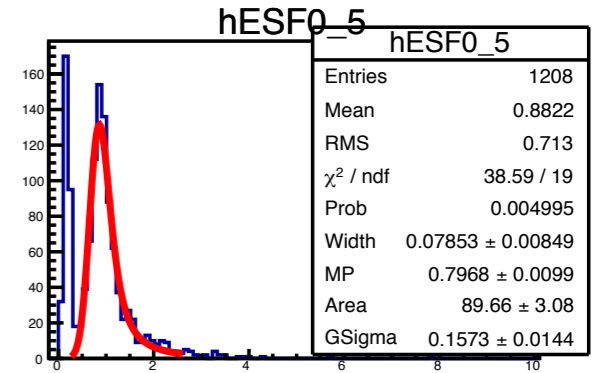
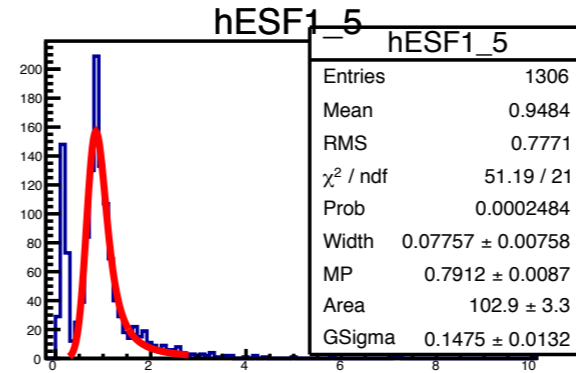
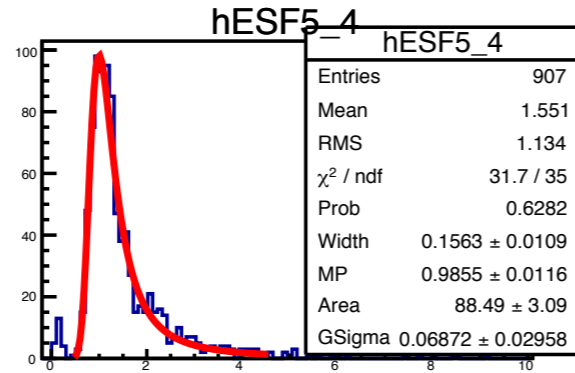
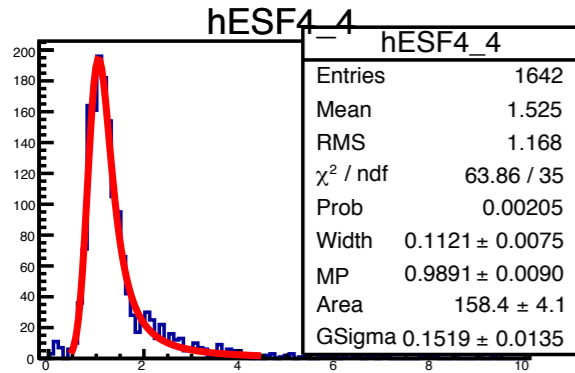
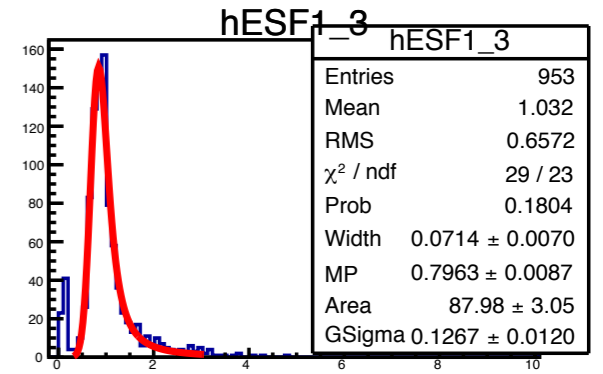
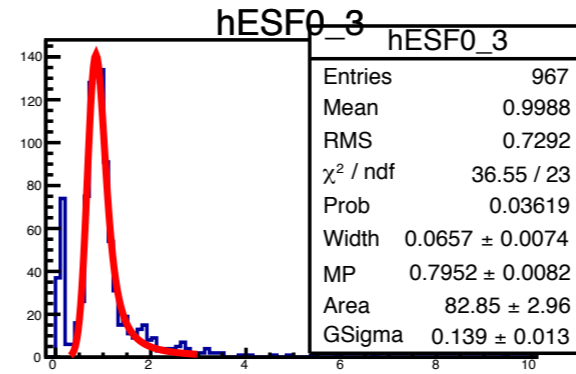
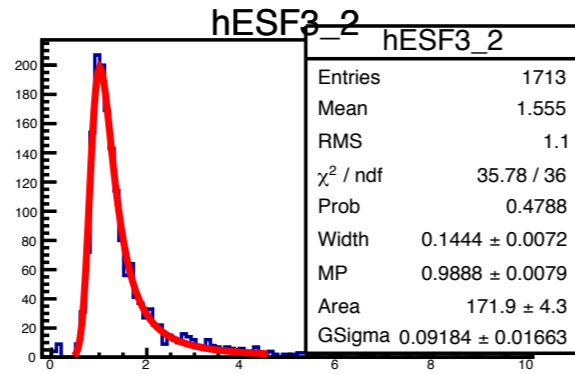
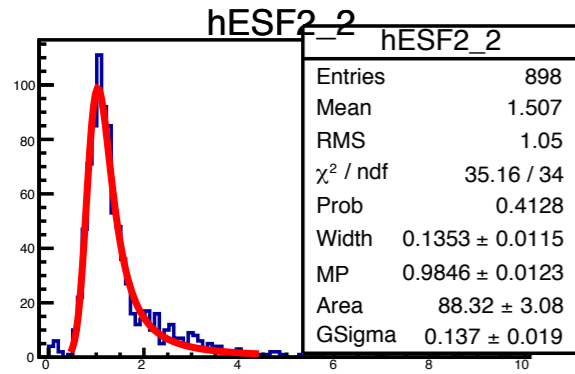
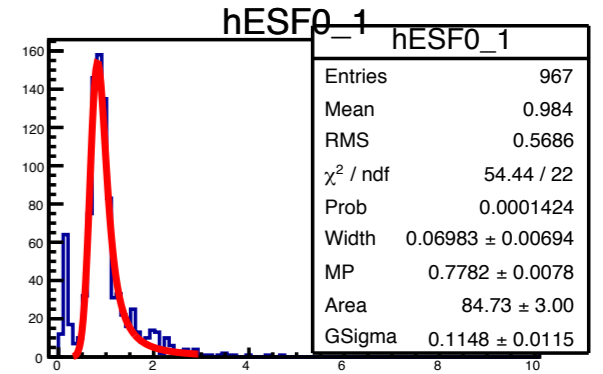
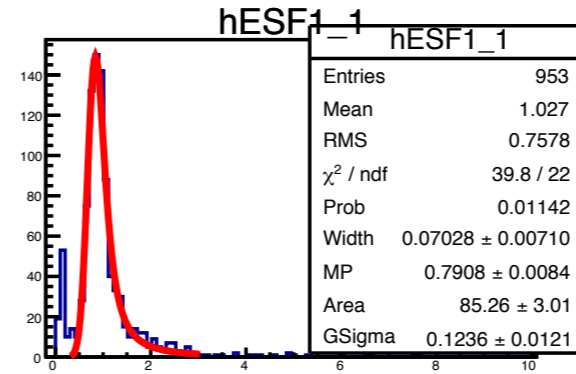
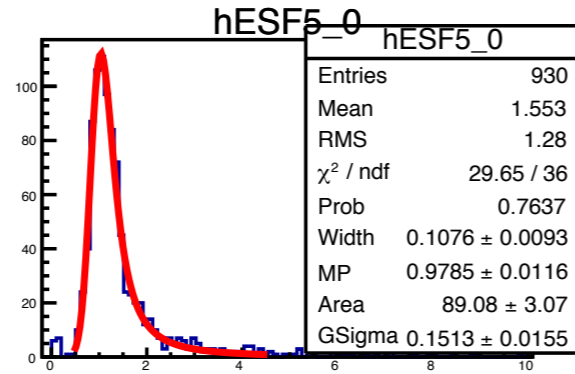
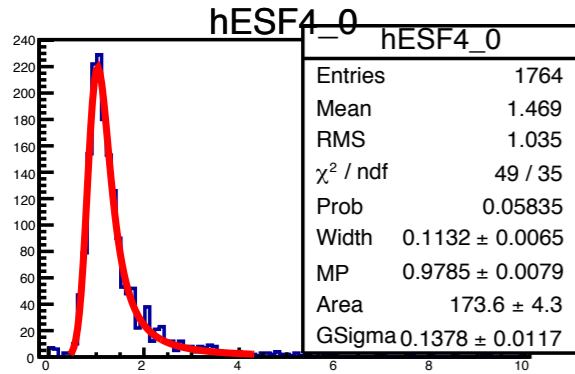
Normalization factor and new path length correction factor applied





# DCVEne Distribution Cosmic ray period8

Normalization factor and new path length correction factor applied



# DCVene Distribution Cosmic ray period9

Normalization factor and new path length correction factor applied

